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Better Feeling Regarding Situation

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,139 bbls. Lowest in 1926, January 30, 1,915,960 bbls.

Efforts to Curtail in Little River and West Texas Show Industry Really Trying to Solve Problems

By Andrew M. Rowley

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

Late developments in the Little River area of the Greater Seminole Field in Oklahoma indicate operators are making conscientious efforts to prevent another flood of crude from demoralizing the market and indications now are that if present conditions can be maintained, a great step has been taken to avoid, or at least postpone for some time, further crude price readjustments downward. Naturally, much depends upon conditions in West Texas where there is considerable activity and where production could be increased very materially within a short time were operators so inclined and facilities available to care for the crude.

Actual curtailment has been made effective in the Little River Pool, although operators have been unable as yet to bring the production down to an average of 100 barrels per day per well, as outlined in the agreement. Field conditions are such that three producing wells in the field go dead when pinched in to the limit of production permitted under the agreement and these wells must be opened for 20 minutes to revive them. Whether such conditions will eventually affect the continuance of the curtailment agreement is a matter of discussion, some operators believing the pinching in harms the wells.

There is a feeling prevalent that as operators are doing all in their power to solve the overproduction situation, little could be gained through price reductions at this time and that the purchasing companies will do their part and endeavor to maintain the present price schedule.

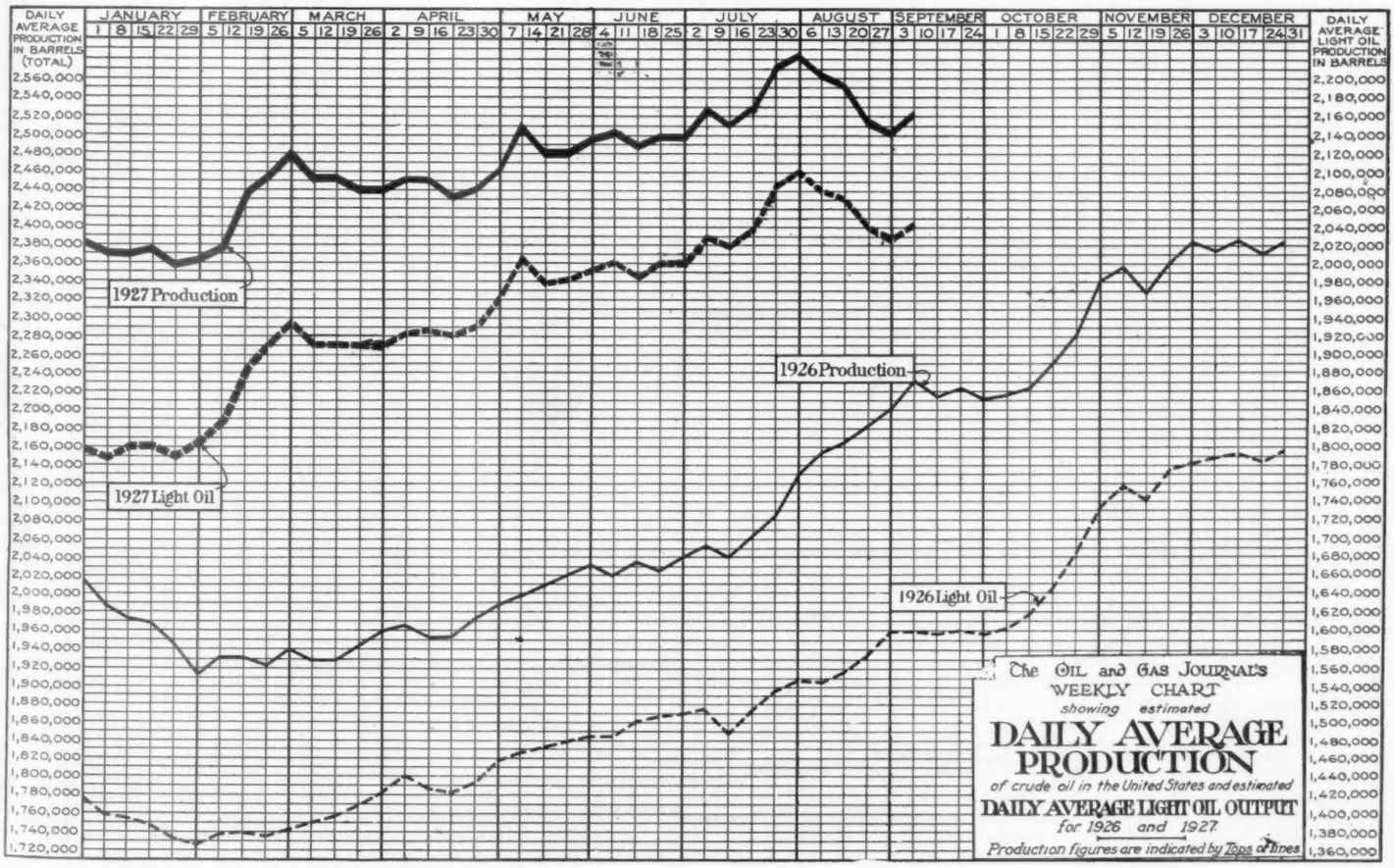
Production in the Ventura Avenue Field in California which has been shut in, is being opened up and it is estimated that field will register an average daily increase in output for this week approximating 8,000 bbls.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended September 3, and a comparison with the previous week follows:

	Sept 3		Aug. 27	
Oklahoma—	Light	Heavy	Light	Heavy
Tonkawa	18,705	.....	19,770	.....
Burbank	37,060	.....	37,845	.....
Other Osage Fields	31,205	.....	31,215	.....
Cushing and Shamrock	21,170	.....	21,205	.....
Bristow and Eastern Bristow	25,095	.....	25,110	.....
Cromwell	12,120	.....	12,245	.....
Garber	11,220	.....	10,575	.....
Blackwell-Braman	9,550	.....	9,515	.....
Seminole	451,410	.....	436,115	.....
Wewoka	14,615	.....	15,540	.....
Northern Miscellaneous	112,485	.....	112,515	.....
Southern Fields	65,740	.....	66,210	.....
Total Oklahoma	810,375	.....	797,860	.....
North Louisiana	44,365	9,650	45,045	9,800
Arkansas	22,685	79,480	22,925	80,015
North Central Texas	157,949	.....	158,843	.....
West Texas	176,394	.....	171,315	.....
Texas Panhandle	98,545	.....	101,425	.....
East Central Texas	31,685	.....	31,705	.....
Kansas	104,710	.....	105,325	.....
Total Mid-Continent Area	1,446,708	89,130	1,434,443	89,815
Gulf Coast	.....	140,975	.....	136,775
Southwest Texas	.....	31,445	.....	32,075
Eastern	114,500	.....	114,000	.....
Rocky Mountain Area	72,080	.....	75,297	.....
California—				
Santa Fe Springs	40,500	.....	40,500	.....
Long Beach	91,500	.....	91,500	.....
Torrance	4,000	17,500	4,000	17,500
Huntington Beach	69,000	.....	67,500	.....
Dominguez	15,000	.....	15,000	.....
Rosecrans	8,250	.....	8,250	.....
Inglewood	20,000	13,500	20,000	12,500
Ventura Avenue	49,000	.....	47,000	.....
Seal Beach	61,000	.....	59,000	.....
Remainder of State	55,000	186,500	55,000	186,000
Total California	413,250	217,500	407,750	217,000
Total United States	2,046,538	479,050	2,031,490	475,665
Grand Total	2,525,558		2,507,155	

→ **Total Increase, 18,433 Bbls.; Light Oil Increase, 15,048 Bbls.** ←



Little Change in Oklahoma Market

Gasoline Continues Weak With U. S. Motor Material Available as Low as 6 Cents in Oklahoma

By W. T. Ziegenhain

Another week of continued weakness in all Mid-Continent refining centers carried gasoline prices to a low of 6 cents in Oklahoma, and the week closed with no immediate prospects of improvement. Gasoline was freely offered on every hand with many of the larger refiners asking 6¼ cents but took 6⅛ cents on material for resale, and there was sufficient gasoline being traded at 6 cents to establish that market. Orders came in fairly consistently and, although there was no rush of orders preceding the Labor Day holiday as some refiners expected, the movement was generally considered good. But even with orders coming in good, gasoline continues to be a buyer's market.

Kerosene did not follow the downward march of gasoline prices and, although there was no price advance in kerosene in general, the better quality material commanded a one-eighth cent better price, and some refiners who had found plenty of kerosene business for their own plants attempted to buy additional quantities for resale and found little available on which a profit could be made on a resale. The purchase of several large shipments from the Gulf Coast over the last two weeks has taken all of the excess material away from that market and the benefits have been partly passed on to North Texas and Oklahoma refiners in turn. This season of the year is the beginning of a period of higher domestic consumption and if refiners find an increased outlet for furnace oil, the production of kerosene may decline some.

Refiners have increased the kerosene yield over the past months as lower endpoint gasolines were put on the market and this increased production was not readily absorbed. Now, with the opening of the distillate and furnace oil season some refiners will take as much as half of their normal kerosene along with a portion of the light gas oil fraction to make the better grades of furnace oil. The kerosene market is generally considered in a better position than any of the other oils.

Distillates have been given more attention on inquiries but the movement is only fair and price still seems to be the basis of the discussion. Fuel oils are maintaining a fairly constant price and their position remains unchanged over the week, but there were sales offers reported made outside of the normal marketing area of the refiners quoting, showing that refiners were willing to absorb freight disadvantages in order to relieve their situation without having to weaken their local market further .

REFINED MARKET BAROMETER

Gasoline prices weakened one-quarter cent in practically all Mid-Continent refinery centers with kerosene the only product offering promise of higher prices over the immediate future. Fuel oil and gas oil have not been generally reduced in price but the free offering of these makes their position insecure. Natural gasolines have developed considerable weakness as the limited local market afforded the only outlet. Contracts for deliveries over the month included sales prices a fraction under the market on the day the contracts were made which indicates the lack of confidence in the future market on the part of the manufacturers. Lubricants remained at the lower prices set last week, with movement normal. The reduction of prices on California lubricants further indicated the weaker general market for lubricants. Wax was considered in an improved position based on the number of inquiries received and the optimism reflected from the eastern market, but actual sales in Oklahoma did not indicate anything more than a gradual betterment in demand with no inclination to raise the price.

Mid-Continent—Refinery and natural gasolines developed additional weakness with other oils barely maintaining last week's prices. Kerosene is an exception as export orders from other territories increased the movement from the Mid-Continent.

Atlantic Seaboard—Bad weather reduced the gasoline consumption and the market was weak. Retail prices remained low in many localities as California, Mexican and Mid-Continent gasoline was dumped on the market. No improvement is offered for refined oil prices in general over the next few weeks. Gulf Coast lubricants have been introduced as a strong competitor and these have held prices at a low level with possibility of forcing additional concessions. Wax exports strengthened this commodity.

Gulf Coast—Gasolines were generally weak with kerosene featured as the only strong refinery product. Gulf Coast lubricants are being shipped to eastern markets at low prices indicating the difficulty of finding an adequate outlet in the Mid-Continent. Fuel oil remained unchanged.

Pennsylvania—Gasoline weakened but movement good. Lubricants are finding a steady movement but their position has been threatened by Gulf Coast lubricants.

California—Refinery and natural gasolines weakened materially with fuel oils strong. Lubricants remained weak with refineries attempting to establish foreign markets.

Chicago—Gasoline was weak throughout the week but witnessed a good movement. Fuel oil and gas oil remained at last week's prices with movement fair. The distillate movement was featureless with marketers expecting the present low prices to exist throughout the coming winter season. Lubricants are weak as cheap red oils tend to lower the general price structure. Compounded oils are experiencing a good movement.

Naturals Weak

Natural gasolines, especially the grades A and AA were weak at all times and manufacturers were not only accepting business over the month at this week's prices, but took an eighth of a cent off on orders calling for several cars. The position of naturals was generally considered to be very weak. The higher grades weakened as a result of the free offering of this material to the few inquiries made for export material. The lower grades of naturals did not reflect their weakness in price because refiners were buying quite a volume of the material to blend with the stored heavy refinery gasoline in their program to reduce stocks. But even with this additional buying there was plenty material

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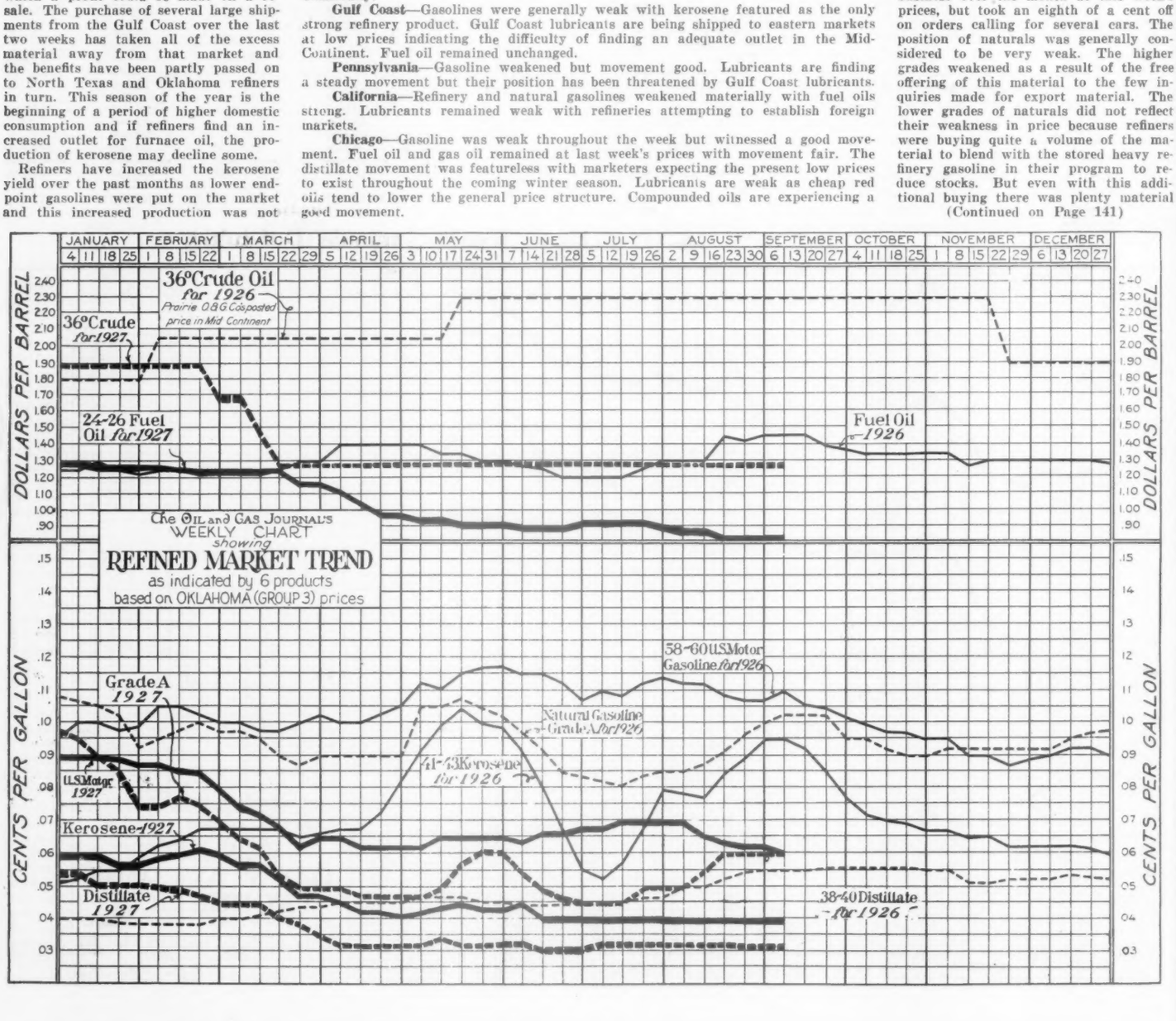

Proration Near in Pecos County Field

Agreement Expected at Next Meeting. If Successful, Similar Efforts May Be Made in Other West Texas Pools

By James H. Dameron

FORT WORTH, Tex., Sept. 3.—Although the second meeting of Pecos County producers held to work out a plan to keep that prolific shallow area "curbed," failed in so far as an actual agreement is concerned, it is believed by the interested operators that an acceptable plan will probably be adopted at the next meeting to be held in Fort Worth September 8.

All of the operators interested agreed the Pecos Field is decisively a menace to the industry and that it is imperative a plan to hold Pecos County production down should be worked out. The second meeting neared definite results and each operator was optimistic over the outcome.

A committee has been formed and a subcommittee of that committee is revising details of the proration plans. Those plans will be passed on by the heads of the interested companies and the representatives of those companies on the main committee will meet Thursday.

If the efforts to "hold down" Pecos are successful it is expected that similar steps will be taken in regard to other West Texas areas which are threatening. If the several shut down plans now in the minds of operators for West Texas are successful they are expected to go great lengths in forestalling any action on the part of Congress affecting the oil industry as has been indicated by Secretary of the Interior Work.

Substantial Progress

One official of a Pecos County producing company pointed out the progress being made when operators of pools with great potentialities co-operated to reach an agreement to keep those pools from weakening the industry as a whole. Such a thing could not have been accomplished a few months ago, he added.

At the second meeting two proposals were submitted to the operators. One was known as the Farish plan and submitted by W. S. Farish, president of the Humble Oil & Refining Co., who started the ball rolling towards a plan for the controlling of Pecos. The other was submitted by the Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co. representatives, joint discoverers of the Pecos Field.

The majority of the operators were in favor of the Farish plan because it did not seek to limit the number of wells to be drilled. Instead it is a proration plan designed to provide a flexible basis for the producing of the Pecos crude automatically based on the market outlet. In that manner the surplus would be kept in the ground instead of being run to steel storage which would be the alternative if a rapid drilling campaign were started in Pecos. The attempt being made is to determine the amount of Pecos crude marketable and make an equitable division of that market among the producers in Pecos. So much oil will be produced and so much of that will go to the market and so much to storage.

The Farish Plan

The plan proposed by Mr. Farish is as follows:

1. Agree on prorating idea and willingness to co-operate.

2. Agree on definitions as follows with such modifications as are proper: (a) Potential production (PP) of a lease is that amount of oil which the completed wells on such lease at that particular proration date would produce if operated to capacity under usual methods.

(b) Potential production of the field (PPF) is the sum of potential production of the various leases.

(c) Outlet (OL) is 30,000 bbls. plus daily amount of oil run to storage or produced.

(d) Allowable production (AP) fraction or percentage is outlet divided by potential field production (OL-PPF).

(e) Allowable production of individual lease is PP of lease multiplied by AP fraction.

(f) Allowable runs to pipe line from individual lease shall be AP of lease less runs to storage.

3. Appoint a committee to apply above definitions and plan to actual figures of production in field, committee to act also as an advisory committee to umpire and as an appeal body.

5. Umpire furnish Humble company list of producers and amount to be run from each.

6. As new wells come in they will be taken into consideration at next revision date.

7. Not more than one well shall be put on production by any operator for each 40 acres of his leases situated within one-half mile of producing wells, provided that one well may be put on production on each lease of less than 40 acres.

8. Agree not to shoot or produce by gas or air-lift during the life of agreement.

Limiting Drilling Unlawful

Several operators questioned concerning the other plan agreed it would bring results but it is the opinion of those operators and their attorneys that a plan limiting the number of wells to be drilled would conflict with Texas laws. However, all plans are being considered by the committee.

It will be noted that the agreement requires the producers to permit their wells to produce naturally or by pump during the life of the agreement suggested by Mr. Farish. This would eliminate shooting of the wells or producing them by air or gas lift. The plan to appoint an umpire is similar to the plan being used in Seminole.

Members of the committee working out plans of the proration are as follows:

W. A. Montcrief, vice president of the Marland Oil Co. of Texas, Fort Worth, chairman; John R. Suman, Humble Oil & Refining Co., Houston, Tex.; B. S. SoRelle, Pure Oil Co., Fort Worth, Tex.; Walter Ritterbusch, Phillips Petroleum Co., Fort Worth, Tex; J. P. Cusack, Skelly Oil Co., Fort Worth, Tex.; E. B. McFarlin, McMan Oil & Gas Co., Tulsa, Okla.; E. G. Allen, Roxana Petroleum Corp., Dallas, Tex.; Warner Clark, California Co., Colorado, Tex. (Standard Oil Co., of California); George Sawtell, Kirby Petroleum Co., Houston, Tex.; Frank Kelsay, Independent Oil & Gas Co., Fort Worth, Tex., (provisional); J. H. Jenkins, Tidal Oil Co., Fort Worth.

Three companies' representatives attending the meeting were not officially carried as committee members because they were without instructions in that regard. However, those companies are expected to name committee members in the next few days. John J. Hiner, attorney for the Transcontinental Oil Co. and W. L. Harris, attorney for the Mid-Kansas Oil & Gas Co., sat with the committee during the session following the naming of that committee. The Gulf Production Co. was represented in a similar manner.

Differences Reconcilable.

Details of any proration proposals was expected to bring to the surface many differences of opinion, but there is evidence that those with differing opinions are not irreconcilable, according to committee members. The third meeting is expected to bring about the adoption of

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Unanimous Little River Agreement

Operators Co-operate for Conservation of Oil Early Action Avoids Seminole Difficulties

By J. L. Dwyer

The Little River Pool of the Greater Seminole area is the first field in which voluntary reduction of oil runs has been accomplished with a minimum of effort upon the part of the committee in charge of proration and the producing companies owning leases within the productive territory.

The cost may ultimately prove very heavy to some of the owners of the better leases who made the sacrifice which was deemed necessary for the saving of the crude price structure, for it is thought that had the Little River Pool gone on unhampered, reductions in the posted crude prices would have speedily followed. Although some concessions in the matter of pinching in the oil have been made, it is believed that the better prices which will be realized will do much to compensate the owners for the pinched in production. To pinch in a well which is making 5,000 bbls. of oil seems to be a heartbreaking task, and to pinch in the offset which has just touched the sand and is a large producer is an equally trying task, especially when almost $2,000,000 is represented in the cost of the lease and the development program.

The Little River Pool is now definitely shut in, and this was accomplished after a few conferences between the advisory committee and the owners of the leases in what is now the heart of the field. The present plan of shutting in the output, is that all wells will be permitted to produce for a period of three days. The wells may be drilled as far into the sand as the owners wish, and for three days their output may flow unrestricted, but after three days their production must be choked down to 100 bbls. per day. Thus far all companies have complied with the orders of the committee.

Nipped in the Bud

Aside from the Burbank Field, which was shut down by Government order, the Little River Field is the most complete shut-down known to petroleum history, and offers a sharp contrast to the efforts to shut down the other pools of the Seminole Field. The first of the series of Seminole shut-down meetings was called in December, 1926, and it was not until late in July, 1927, that any evidences of real proration were apparent. The first Little River shut-down meeting was called August 8, 1927, and in four weeks

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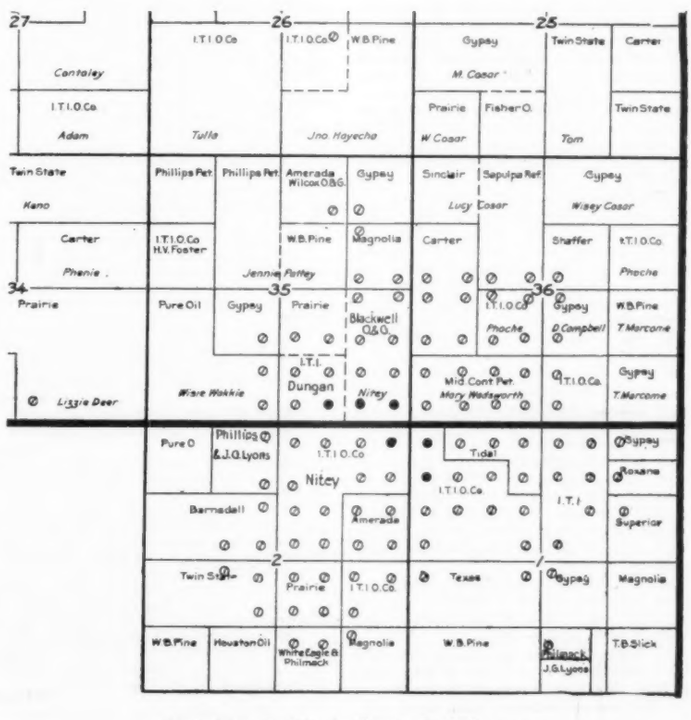

Little River Pool in the Greater Seminole area.

Silver Anniversary Meeting of N. P. A.

Program for Celebration of Twenty-fifth Year. Review of Association's Achievements for Industry

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 5.—The National Petroleum Association will hold its twenty-fifth anniversary meeting at Atlantic City on September 14, 15, 16, at the Hotel Traymore.

There will be no more interesting feature of this occasion than the historic narrative of the development of the code of ethics and the economic principles that have been worked out by this enterprising body of oil men during this quarter of a century.

What these men have done can best be illustrated by a brief picture of their industrial conditions in 1902 placed alongside of another picture showing what they are today. The process of evolution that has taken place during this period is well worth study at this time.

Just as there was necessary some intelligent and courageous leadership for the oil men who same together in the National Petroleum Association in 1902, so is it equally necessary that the industry today should take counsel of the past, study what these men did and undertake to establish among themselves a rational system of business to bring prosperity to themselves, and to the country at large. The idea that one man's prosperity can be attained without regard to the interests of others similarly engaged in business should be abandoned. That is the outstanding lesson taught by the 25 years of study and evolution that has led up to the present conditions of security and prosperity of this group.

Era of Individualism

The condition that existed in 1902 in the eastern oil fields was one that had been in vogue during two decades preceding. Individualism had been developed to a point of fanaticism. Competition became so disastrous that the minds of men turned toward a higher form of competition than the individual struggle of man against man that had prevailed. The thought became dominant that the old competition was a vast waste of energy and money that contributed to ill feeling and bickering reduced the profits of the oil men to a minimum and did the public no good whatever, because only with the principles of economy applied to the industry as a whole was it possible to reduce prices to the lowest attainable level. No one now questions the idea that business on a large scale, or business allied through associations to produce more or less similar results, tends for stability, economy, profits, for those engaged in industry and the lowest possible cost to the consumer.

It was then considered that for two railroads to combine was indicative of a design to gain excessive profit at the expense of the public. Today the Interstate Commerce Commission, formed for the purpose of guarding the public against discrimination and extortion, favors rational combination of railroads to bring them into large systems, and in some quarters students of transportation think a single transportation system would give the greatest service at the least cost to the shipping and traveling public.

The same thing took place in the great steel industry which has grown into a body of giants instead of smaller and weaker competitive units.

In both of these classes of industry both stockholders and the public have gained. Wise management, a due regard for fair treatment and skill have combined to reach this result. Instead of differences being settled by costly warfare, negotiation and conciliation have proved to be effective.

The same story has been told in other industries. In no instance have the problems of co-operation been worked out to better advantage than by the National Petroleum Association.

Organization of N. P. A.

The National Petroleum Association was organized June 17, 1902, at Pittsburgh, Pa. Its first officers were H. A. Jamieson, president; W. E. Wall, first vice president; S. M. Willock, second vice president; E. H. Anderson, secretary and treasurer.

There were 19 charter members who joined in this initial step for harmony and common sense in the conduct of the oil refining business in the section of the country then comprising the important area that was supplying products of petroleum to the nation. These 19 charter members were nearly all companies. They were: Warren Refining Co., H. A. Jamieson, proprietor; Conowongo Refining Co., W. E. Wall, treasurer; Empire Oil Works, A. L. Confer, proprietor; Waverly Oil Works, W. S. Willock, proprietor; Cornplanter Refining Co., W. D. Todd, general manager; Island Petroleum Co., V. B. Ward, vice president; Sterling Oil Works, M. J. Walsh, general manager; A. D. Miller Sons Co., B. B. Miller, J. B. Miller, A. D. Miller; Emlenton Refining Co., P. J. Bager; Crystal Oil Works, J. A. Faucett; Germania Refining Co., H. Suhr, treasurer; Tiona Refining Co., T. W. Faires, treasurer; Levi Smith; Titusville Oil Works, F. Tackey; Superior Oil Works, G. Eaton, secretary; Paragon Refining Co., F. H. Steel; Canfield Oil Co., George R. Canfield; Pittsburgh Oil Refining Co., E. H. Anderson, secretary; Crew Levick Co., William Muir, manager.

Just as many successful organizations have started, the National Petroleum Association for four years from its beginning acted through the voluntary co-operation of its members. During that period these men were getting to know one another in a way they had never experienced before. Association contributed to friendship. It inculcated a feeling of interdependence and did much to establish mutual confidences. These men really found that it was not necessary to be enemies to succeed in business. They gradually discovered that there was a large degree of mutuality of interest in everything they were doing and that the prosperity of each was largely dependent upon the prosperity of the group.

Any method of business that could not be approved as sound from an economic point of view was soon to be understood as a detriment to everyone, although it might appear for the moment that a cutthroat and uneconomic policy would throw trade in the hands of one as against another.

Record of Achievement

The evolution that was taking place in this association resulted in the opening of an office in 1906 in Cleveland, Ohio, and C. D. Chamberlin was made secretary of the association and F. W. Boltz, traffic manager. Back of these men was this determined group of courageous and far-seeing refiners. Today the men who supported this movement have achieved for themselves a distinction that permits the placing of their names on a scroll of honor in the temple of American industry.

It must not be supposed that all went smoothly in a great movement of this kind. There was friction but everyone acknowledges that the goal to which they were tending was ever kept in sight.

With the development of their efforts there was an enlargement of the organization. Mr. Boltz remained traffic manager from 1906 to 1924 and became general traffic expert in 1925. Mr. Chamberlin became general counsel in 1917 and retained that position up to 1926.

In enlarging its activities, the National Petroleum Association in 1918 opened an office in Washington, D. C., and Fayette B. Dow became Washington counsel. Mr. Dow's conservative and clear-headed counsel has been dominant since he took office. The Washington office gradually took on more and more importance because it was here before the Interstate Commerce Commission and other branches of the Government that important matters were to be settled.

In 1925 the offices of the association were consolidated in Washington and the Cleveland, Ohio, office was discontinued. Mr. Dow succeeded Mr. Chamberlin as general counsel in 1926 and since that time Mr. Chamberlain has been advisory counsel. The Washington staff consists in addition to Willis Crane, traffic attorney; Horace L. Lohnes, assistant to the general counsel; Harry E. Elkins, assistant to the traffic attorney.

In 1919 the association was organized under eight departments each in charge of a trustee. This permitted the entire organization to function with greater specialization. These departments related to manufacture, standards and tests, economics, accounting and statistics, traffic and transportation, legislation and litigation, membership and relations, welfare and insurance, trade and commerce.

Present and Past Officers

The present officers and trustees of the National Petroleum Association are O. P. Keeney, president; P. S. Tarbox, vice president; H. A. Logan, second vice president; Herbert G. Eaton, recording secretary; and G. B. Hunter, treasurer. There are 12 trustees as follows: Fred C. Clark, Sheldon Clark, F. B.

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PROGRAM OF THE TWENTY-FIFTH ANNUAL MEETING OF THE NATIONAL PETROLEUM ASSOCIATION

Atlantic City, September 14, 15, 16, 1927

Wednesday Morning, September 14

10 A. M. (Daylight saving time.)
Meeting of the trustees.
11 A. M. Reception. R. A. Wotowitch, Chairman, Reception Committee.

Wednesday Afternoon

2 P. M. (Daylight saving time.)
Address of Welcome, O. P. Keeney, President.
Reading of minutes, H. G. Eaton, Recording Secretary. (Note—The minutes will be read at the trustees' meeting and the reading at the general meeting will be dispensed with except as to such matters as any of the trustees or members may desire to bring to the attention of the meeting.)
Appointment of Nominating Committee.
"The Association's Finances," G. B. Hunter, Treasurer.
Appointment of Auditing Committee.
Address (Speaker to be announced.)
"Accident Prevention, Why and How," H. N. Blakeslee.

Thursday Morning, September 15

9:30 A. M. (Daylight saving time.) Fayette B. Dow, presiding.
The twenty-fifth anniversary.
"The Significance of This Occasion," C. D. Chamberlin, Advisory Counsel, National Petroleum Association.
"Greetings From Other Associations." W. R. Boyd, Jr., Assistant General Counsel and Secretary, American Petroleum Institute; G. G. Woodruff, Western Petroleum Refiners Association; L. V. Nicholas, President, Independent Oil Men of America; James A. Gilmore, Secretary, American Oil Men's Association.
"Foreign Affairs of Interest to the Oil Industry," Edward Prizer, Chairman of the Board, Vacuum Oil Co.
"Trade and Commerce," E. M. Lyons, Trustee in Charge, Department of Trade and Commerce.
"Standards and Tests," A. W. Scott, Trustee in Charge, Department of Standards and Tests.

Thursday Afternoon

2 P. M. (Daylight saving time.) W. E. Wall, presiding.
"How the Association Was Organized," W. E. Wall.
"The Advantages of a Common Enemy," W. T. Holiday, General Counsel, Standard Oil Co. of Ohio; R. D. Benson, Director, Tide Water Oil Co.
"The First President—H. A. Jamieson—and the Efforts of the Early Years," W. D. Todd, Chairman of the Executive Committee, 1902-1903.
"The Problem of a Crude Oil Supply," George P. Brockway.
"The Employment of a Secretary and Traffic Manager," William Muir.
"The Charter of the Association," Herbert G. Eaton.
"Organization of the National Petroleum Mutual Fire Insurance Co.," C. B. Dallam.
"Inspection Burdens," D. J. Cavanaugh.
"The Association and the Railroads," Willis Crane.
"The Fifth President—Col. U. G. Lyons," Frank F. Moore.
"Reminiscences," by the members.

Thursday Evening

7 P. M. (Daylight saving time.)
Twenty-fifth Anniversary Banquet, Shelburne Hotel.

Friday Morning

9:30 A. M. (Daylight saving time.)
"New Developments in Petroleum Manufacture," Dr. T. C. Delbridge, Atlantic Refining Co.
"Legislation Affecting the Oil Industry," Sheldon Clark, Trustee in Charge, Department of Legislation and Litigation."
"The Importance of a Traffic Department to a Petroleum Association," Frank B. Fretter, Trustee in Charge, Department of Traffic and Transportation.
"The Relation of Membership to the Success of the Association," T. J. Hilliard, Trustee in Charge, Department of Membership and Relations.
"Is Accurate Information Worth What It Costs?" P. S. Tarbox, Trustee in Charge, Department of Economics, Accounting and Statistics.
"Fire Prevention Activities of the Association," R. A. Wotowitch, Trustee in Charge, Department of Welfare and Insurance.
"Efficiency in Manufacture," B. B. Stroud, Trustee in Charge, Department of Manufacture.

Friday Afternoon

2 P. M. (Daylight saving time.)
Meeting of members participating in the Co-operative Engineering Program. Open to all members interested in this subject.

Large Drop in Crude Run to Stills

Low Gasoline Prices Cause Refiners in Mid-Continent to Curtail Refinery Operations in All Areas

By W. T. Ziegenhain

Today's low refinery prices are forcing a decrease in the crude run to stills in the Mid-Continent area which are shown as 422,150 bbls. for September, and this decrease has been effected by all areas. The total decrease compared to the high mark set for August amounts to 35,650 bbls., the major reduction being in the refineries in the north and central Texas area. The reduction in this section amounted to 15,350 bbls. and was followed by Kansas which shows a reduction of 11,650 bbls. Oklahoma's runs have been decreased 4,800 bbls. and North Louisiana by 3,800 bbls. This reduction makes the runs for September of this year practically equal to those of the same month a year ago. The runs a year ago were 420,495 bbls., a difference of only 1,655 bbls.

There were no changes in the number of plants in the field, but the number of operating plants has been reduced by three on the first of the month. These are in the North Texas area and include the White Eagle Oil & Refining Co.'s plant at Fort Worth, the Primrose Petroleum Co.'s plant at Wichita Falls, the Star Oil & Producing plant also at Fort Worth, and the Travis Refining Co.'s plant at Burkburnett. The shutdown of the White Eagle refinery, however, is due to making repairs to the crude stills and the operation of the plant will be resumed on completion of the work. The Wichita refinery of the Barnsdall Refineries, Inc., will operate over the first half of the month and will then shut down for the balance of the month. The Wilhoit Refining Co.'s plant at Joplin, Mo., will be down for the first 10 days of the month also. With the end of the high consuming season in sight refiners are beginning to plan next year's schedule of operations and several have made tentative estimates of production for the year. Refiners having stocks of gasoline on hand have chosen to sell at the present low prices rather than to carry them over into next year and are decreasing their production by running less crude.

This program does not help the crude situation for with the decrease in the crude charges the stills that much more will have to be run to crude storage. But with many refiners taking a loss of every barrel of oil run, there is no alternative at this period of the year. This not only applies to skimming operations but cracking is also unprofitable. Cracking profits have paid the losses on the skimming operations in the past but even the revenue from cracking has been reduced to the point where the operation is being carried on at an even break in many cases. Many refiners are operating their cracking plants to hold their organization and continue with the production of gasoline rather than run the chances of lowering the already weak fuel market which does not seem to be in a position to absorb the additional fuel oil and gas oil charging stock that would be dumped onto the market.

Oklahoma

Considering the great many plants operating in Oklahoma compared to the number operating in other states there were relatively few changes in the operations for the month. The runs to the stills were reduced only 4,800 bbls. compared to last month and were just 4,425 bbls. higher than a year ago. The Empire Oil & Refining Co. has practically completed the Dubbs unit at Ponca City and along with the revision of the crude battery of their Okmulgee plant are about all of the changes made from the standpoint of capacity in this area.

North and Central Texas

Refiners in this section reduced their crude runs 15,350 bbls. but exceeded those of a year ago by 7,025 bbls. Aside from this general reduction in runs and the shutting down of the three plants already mentioned the only other change from last month's operation was the starting up of the two Dubbs units at the Empire plant in Gainesville. These units will be able to crack 2,000 bbls. of oil daily and will be placed in full operation as soon as the still settings have been thoroughly dried and all equipment tested.

Kansas

Refiners in this section reduced their runs 11,650 bbls. and were 7,470 bbls. under those of a year ago. The reduction was fairly general. Several refiners in this section have curtailed their cracking operations but the Kansas situation does not appear to be any different than that of other sections of the Mid-Continent and this may be said of the Mid-Continent as a whole.

North Louisiana

With no changes in the number of operating plants, the crude runs were reduced 3,800 bbls. and were 700 bbls. below those of a year ago. This reduction is entirely due to the decrease in the runs of the Crystal Oil & Refining Co. from 13,000 bbls. to 9,000 bbls.

Arkansas

The operation of the refiners in this section showed very little change from those of last month. The crude runs remained the same but were slightly under those of last year. This decline over the year's time has characterized the Arkansas refinery operations throughout the year.

MID-CONTINENT REFINERY OPERATIONS
TABLE NO. 1
(Based on operations September 1, 1927, and August 1, 1927)

	*No. of Plants Sept. 1	Crude Cap'y Bbls.	Crack Cap'y Bbls.	Plants Oper'g Sept. 1	Runs to Stills Sept. 1	Plants Oper'g Aug. 1	Runs to Stills Aug. 1	Daily Decr'se Sept. 1
Oklahoma	47	272,900	80,100	44	184,775	44	189,575	4,800
N. C. Texas	42	179,800	43,800	35	96,550	38	111,900	15,350
‡Kansas	20	131,500	61,600	16	84,550	16	96,200	11,650
No. Louisiana	5	46,300	19,300	4	36,300	4	40,100	3,800
Arkansas	11	34,300	30,000	8	19,975	8	20,025	50
Total	125	664,800	234,800	107	422,150	110	457,800	35,650

*Does not include plants shut down one year or more. ‡Includes two Missouri plants.

TABLE NO. 2
(Based on operations September 1, 1927, and September 1, 1926)

	No. of Plants Sept. 1 1926	Crude Cap'y Sept. 1 1926	Plants Oper'g Sept. 1 1926	Runs to Stills Sept. 1 1926	Daily Inc. Sept. 1 1927
Oklahoma	52	263,300	49	180,350	4,425
N. C. Texas	38	167,550	30	89,525	7,025
†Kansas	21	127,000	17	92,020	†7,470
No. Louisiana	5	44,000	4	37,000	†700
Arkansas	9	30,500	10	21,600	†1,625
Total	125	632,350	110	420,495	1,655

*Does not include plants shut down one year or more. †Decrease. ‡Includes one Missouri plant.

RUNS TO STILLS IN MID-CONTINENT REFINERIES

	Bbls. Daily
1925	
May 1	398,940
June 1	423,950
July 1	440,350
August 1	427,382
September 1	407,690
October 1	415,575
November 1	383,225
December 1	375,979
1926	
January 1	390,200
February 1	385,845
March 1	365,990
April 1	368,210
May 1	391,355
June 1	415,450
July 1	410,070
August 1	407,475
September 1	419,995
October 1	408,975
November 1	417,575
December 1	403,450
1927	
January 1	403,625
February 1	418,595
March 1	418,920
April 1	401,860
May 1	407,355
June 1	426,170
July 1	428,075
August 1	457,800
September 1	422,150

REFINERY OPERATIONS IN OKLAHOMA
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Sept. 1	Runs August 1
Anderson-Prichard Oil Corp., Cyril	2,500	1,800	1,800
Barnsdall Refineries, Inc., Barnsdall	6,000	3,500	3,500
Barnsdall Refineries, Inc., Okmulgee	10,000	5,500	5,500
Bell Oil & Gas Co., Grandfield	4,500	2,000	2,100
Bolene Refining Co., Enid	5,000	2,000	2,000
Cameron Refining Co., Ardmore	4,000	2,400	3,300
Canfield Refining Co., Yale	500	75	75
Champlin Refining Co., Enid	16,000	11,000	11,000
Continental Oil Co., Sapulpa	10,000	2,400	2,400
Cushing Refining & Gasoline Co., Blackwell	1,500	1,500	1,500
Cushing Refining & Gasoline Co., Cushing	3,500	2,000	2,000
Empire Refineries, Inc., Cushing	5,000	4,700	4,700
Empire Refineries, Inc., Okmulgee	3,000	3,000	1,500
Empire Refineries, Inc., Ponca City	7,500	7,500	7,500
Garber Refineries, Inc. (Omar), Garber	3,500	3,200	3,200
Glimer Oil Co., Ringling	1,500	Shut down	Shut down
Globe Oil & Refining Co., Blackwell	5,000	5,500	5,000
Illinois Oil Co., Cushing	3,000	2,200	2,500
Imperial Refining Co., Ardmore	5,000	3,000	3,000
Independent Oil & Gas Co., Okmulgee	4,000	2,700	2,700
Interocean Refining Co., Bristow	4,000	500	1,000
Johnson Oil Refining Co., Cleveland	6,000	5,500	5,500
Marland Refining Co., Ponca City	28,000	21,000	22,000
Mid-Continent Petroleum Corp. (Cosden), West Tulsa	40,000	24,000	24,000
Oil State Refining Co., Enid	2,000	Shut down	Shut down
Oil State Refining Co., Allen	500	500	500
Peppers Gasoline Co., Covington	1,000	1,000	1,000
Pierce Oil Corp., Sand Springs	12,000	7,000	7,000
Producers Oil Co., Bristow	2,500	600	1,000
Producers & Refiners Corp., West Tulsa	6,000	3,500	3,500
Pure Oil Co., Ardmore	5,000	2,000	2,000
Pure Oil Co., Muskogee	8,000	5,000	7,000
Riley Petroleum Co., Bristow	1,000	500	500
Rock Island Refining & Pipe Line Co., Duncan	2,500	1,500	1,500
Sayre Oil & Refining Co., Sayre	500	Shut down	Shut down
Shaffer Oil & Refining Co., Cushing	10,000	10,000	10,000
Sun Oil Co., Yale	4,500	4,000	4,000
Sinclair Refining Co., Muskogee	1,000	700	700
The Texas Company, West Tulsa	10,000	12,000	12,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	1,600	1,600
Tidal Refining Co., Drumright	10,000	8,000	8,000
Transcontinental Oil Co., Boynton	2,500	1,500	1,500
Transcontinental Oil Co., Bristow	5,000	3,500	4,000
Tonkawa Petroleum Co., Tonkawa	2,500	800	800
Western Oil Corp., Beckett	2,000	1,000	1,000
White Oak Refining Co., Allen	2,000	2,000	2,000
Yale Oil Corp., Yale	1,500	1,100	1,200
Total	272,900	184,775	189,575

REFINERY OPERATIONS IN NORTH LOUISIANA
(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Sept. 1	Runs August 1
Crystal Oil Refining Corp., Shreveport	13,000	9,000	13,000
Great Southern Refining Co., Ardis	2,000	Shut down	Shut down
Louisiana Oil Refining Corp., Shreveport, Bossier	20,000	16,500	16,500
Shreveport Producing & Refining Co., Shreveport	5,500	5,200	5,200
*The Texas Company, Shreveport	5,800	5,600	5,400
Total	46,300	36,300	40,100

*Topping.

REFINERY OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year.)

	Daily Capacity	Runs Sept. 1	Runs August 1
Henry H. Cross Co., Smackover	4,000	3,900	4,000
Homo Refining Co., Camden	500	Shut down	Shut down
Home Oil & Refining Co., Hot Springs	500	Shut down	Shut down
Houston Oil Co., Camden	3,000	2,300	2,300
Kettle Creek Refining Co., Pearson	6,000	2,500	2,500
Lion Oil & Refining Co., El Dorado	12,000	6,500	6,500
Newark Refining Co., El Dorado	1,800	900	900
Ouachita Valley Refining Co., El Dorado	1,000	575	625
Root Refineries, El Dorado	2,500	2,200	2,100
Simms Oil Co., Smackover	1,000	1,100	1,100
E. M. Tulle, El Dorado	1,000	Shut down	Shut down
Total	34,300	19,975	20,025

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year.)

Alamo Refining Co., Isom	1,600	800	800
Amarillo Producers & Refiners Corp., Isom	2,000	1,000	1,000
Amarillo Refining Co., Amarillo	5,000	3,000	3,200
American Refining Co., Wichita Falls	7,000	2,800	3,200
Anderson & Prichard Oil Corp. (Western), Wichita Falls	1,500	Shut down	1,100
Col-Tex Refining Co., Colorado	7,500	5,800	5,800
Continental Oil Co., Wichita Falls	6,000	3,600	2,200
Dale Oil & Refining Co., Electra	2,500	1,250	2,100
Empire Refineries, Inc., Gainesville	5,000	4,000	4,000
Falls Refining Co., Wichita Falls	1,500	1,000	1,000
Gulf Refining Co., Fort Worth	10,000	7,000	13,000
Hagaman Refining Co., Tiffin	2,000	150	150
Homo Refining Co., Muenster	1,000	400	400
Humble Oil & Refining Co., Burkburnett	4,000	3,000	3,000
Humble Oil & Refining Co., McCamey	10,000	10,000	10,000
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,050	1,500
Kent-Middleton Refining Co., Angus	4,000	1,200	1,300
Kent-Middleton Refining Co., Minerva	4,500	1,400	1,500
Macmillan Petroleum Co., Isom	3,500	2,200	4,200

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To Name Committee on Oil Legislation

American Bar Association Minerals Section Chairman to Select Members. Veasey Chairman of Council

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

BUFFALO, N. Y., Sept. 3.—In opening the first annual meeting of the mineral section of the American Bar Association at which the subject of petroleum has been discussed. John C. Townes, chairman of the mineral section, laid emphasis upon the fact that this was to be a serious consideration by lawyers of the legal phases that apply to oil industry with special reference to clarifying the law bearing upon the subject under discussion. The engineering features involved would be important and they would study them but beyond everything else the duty of the mineral section would be to analyze the law so that in the future there would be a clearer understanding of its provisions bearing upon the industry as a whole than has prevailed in the past.

Mr. Townes thought that the legal profession had been negligent by not having discussed these questions in relation to the legislative control in the business of producing oil and gas so that the profession was not prepared to give advice on that subject that the industry had a right to expect. It was for this purpose to a large extent that the mineral section of the American Bar Association had been formed.

The address of Secretary Hubert Work, chairman of the President's Federal Oil Conservation Board (published in The Oil and Gas Journal last week) indicated that the administration of the Government has taken a businesslike view of the needs for conservation in the oil industry with a determination to seek a remedy for the benefit of the great body of consumers of petroleum products and indicating that sound business principles are being sought by the oil board. His address dissipated any possible suspicion in the minds of his audience that the administration was attempting aribitrarily to force upon the oil industry any dictatorial plan for its control.

Veasey Address Feature

Perhaps the most notable feature of this gathering was the address delivered by James A. Veasey, general counsel of the Carter Oil Co. of Tulsa, Okla., published in last week's issue of The Oil & Gas Journal. In his discussion of the legislative control of the business of producing oil and gas, Mr. Veasey presented to the mineral section a paper than cannot fail, throughout the discussion of these questions, to be the basis of all consideration that will be given them by lawyers.

While this paper was prepared for this particular occasion it was the result of lifelong study by Judge Veasey and it was particularly admirable for the fairness in which it attempted to set before the lawyers of the country every phase of the law that has been encountered by him in long years of practice. It was more of a symposium of the law than a brief in favor of any particular point of view. It was written in such clear and simple language that it can be depended upon to give any reader a comprehensive view of the situation that confronts the country in respect to overproduction of oil and possible methods for remedying this evil.

Of extreme interest was the address of Clarence E. Martin of Martinsburg, W. Va., on "The Relative Rights and Duties of Subterranean Properties." This is a subject that has thrown considerable light thrown upon it by legal decisions and Mr. Martin's discussion included references to every important up-to-date decision involved.

The mineral section elected officers and a council of seven of its members as follows: Guerney Newlin, chairman; Earle W. Evans, vice chairman; Peter Q. Nyce, secretary, and Jefferson P. Chandler, treasurer. Council: James A. Veasey, Oklahoma, chairman; John C. Townes, Texas; S. L. Herrold, Louisiana; Eugene C. Denton, Oklahoma; T. J. Flannelly, Kansas; John Gray, Idaho, and Clarence E. Martin, West Virginia.

Peter Q. Nyce, re-elected as secretary, has been identified with the mineral section since it inception and has a very wide acquaintance of both lawyers and administrative officers in the oil industry.

Oil Committee

In addition to the council the chairman of the section was authorized to appoint a committee of nine members to which will be referred the entire question of conservation of oil and gas. The new chairman, Mr. Newlin, announced that he wished to announce this committee only after he had received suggestions from as many members of the oil section or from other lawyers, to assist him in selecting men of outstanding ability to discuss and report upon the questions involved and he invited communications for that purpose which may be sent to him at "The Title Insurance Building, Los Angeles, Calif."

The resolution authorizing the appointment of this committee follows:

"Resolved: That the chairman of this section shall appoint a committee composed of nine members to consider and report upon such laws and proposals relating to the conservation of mineral resources within the United States, as (1) such committee shall select, or (2) as shall be referred to it by the section or its council; which committee shall have authority and is hereby directed to (a) co-operate, in so far as may be consistent with its duties and the constitution, by-laws and traditions of the American Bar Association, with other individuals and organizations having similar or analogous purposes, and (b) to constitute and define the duties and methods of procedure of as many subcommittees as may seem to it from time to time necessary."

Mr. Newlin in accepting his election as president of the section declared that his predecessor, Mr. Townes, deserved not only the thanks of the American Bar Association, but of the entire citizenship of America, because it was Mr. Townes who had originated this mineral section for the purpose of solving the vital problems now troubling the oil industry so far as that can be done by legal or legislative procedure or both.

Suspension of Drilling

Former Representative Phil P. Campbell of Pittsburg, Kans., offered a resolution which was referred to the council, reported back favorably, and adopted by the mineral section as follows:

"Resolved: That the mineral section of the American Bar Association, having considered the subject, recommend that the powers and discretions of the Secretary of the Interior with respect to his administration of the mineral leasing laws and the laws with respect to his administration of mineral leases on restricted Indian lands be so enlarged that he shall have power to postpone or suspend drilling operations on permits for discovery and on leases on public lands and on restricted Indian lands, and providing that in the exercise of this discretion he may determine the drilling operations as to the number of wells on gas and oil leased on given leased areas."

As will be seen, if this resolution is responded to by legislation it recommends to Congress, the Secretary of the Interior will be given additional authority which will avoid the necessity for the sale of the leasing rights of the oil land of the Osage Nation to the extent of 100,000 acres every year until all of their land is leased and will allow the secretary to use his discretion in that respect. That will do much to help solve the problem of overproduction and throwing upon the market of oil from the Osage Nation at times when it is not needed in the market because of a lack of demand.

General Law Opposed

Mr. Campbell referred to other periods of flush production followed by scarcity with alternate flush and scarce production.

"So," said Mr. Campbell, "even a most casual survey of the conditions makes it clear that it is not wise to even contemplate the enactment of a general law to remedy a temporary condition. The reason for the enactment of such a law in the present case, according to all experiences, will soon pass by. If the law is enacted it will remain and what is worse the bureau it creates will also remain and will grow from year to year and become a far greater evil to the country than the condition it was created to remedy. California, Seminole, Smackover and other flush oil fields will soon be forgotten.

"It will be recalled that during the war, when laws that stood in the way of proper action to win the war were ignored all those engaged in the oil industry in the United States got together to meet the oil requirements of the time both for military and civil purposes, at home and abroad. It has been said that no industry during the war period met all the requirements, both military and civil, as promptly and as economically and as cheaply, as the oil industry. It was the one industry that did not take war profits during the war period or since. It was also the one industry that was not under Government regulations or control.

"In this connection, it may safely be said that the flush production that is embarrassing the industry is not resulting in waste of the product. The production over current demand has been carefully stored—it is true at great expense to the industry—and is and will be available for use as it may be required. It has been conserved. Neither Congress nor any bureau it might create is nor can be more concerned in the economic production of oil than those engaged in the industry itself. They have $15,000,000,000 of invested capital to protect; they have many millions of stockholders to satisfy. They must and do look to the future of the industry. They must find crude oil and take it from the ground to make their industry a success. They will not permit waste or overproduction at too great an expense if in an emergency Congress will permit them to agree on plans to prevent such waste and overproduction."

Indian and Public Lands

But there was a field in which authority might well be recognized to assist in checking overproduction when flush fields are brought in, said Mr. Campbell, reverting to his resolution. The American Bar Association may well recommend to

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H. L. DOHERTY ARGUES WAR POWER OF GOVERNMENT CAN REGULATE OIL

The brief addressed by Henry L. Doherty, of New York, to the minerals section of the American Bar Association at Buffalo, held that in as much as oil, our most important munition of war, is being flagrantly wasted, the Federal Government is well within its rights, under the war powers of the Constitution, to step in and pass legislation adopting the unit operation of pools and thereby regulate oil production and protect our national defense.

Mr. Doherty says: "Oil is our most important munition of war, and its waste and dissipation have reached proportions which can hardly be described by the use of conservative language. In fact, our overproduction and waste are nothing short of scandalous. It would be the worst sort of a national calamity if we should exhaust our oil resources to the point where our national defense was imperiled.

"In view of the importance of oil for our national defense, and also in view of the fact that an adequate supply cannot be proven; also in view of the fact that even if our resources are enormous, they must soon be dissipated under our present methods of production, therefore, I regard oil as coming within the scope of the powers that should be exercised by the Federal Government.

"The Federal Government has power to conscript the wealth and blood of the nation in event of war or in preparation for war. It is not necessary to determine how far the Federal Government can go at this time into the matter of legislating regarding the production of oil, because no one, with any degree of support, is urging that the Federal Government do more at this time than merely step in and legislate to force the development of our oil pools in accord with natural laws and because in doing this it will not be taking property, but will be greatly increasing the amount of oil that can be recovered, not only for the owners but for the nation.

"President Coolidge in appointing the Federal Oil Conservation Board said at one point: 'It is even probable that the supremacy of nations may be determined by the possession of available petroleum and its products.'

"To a layman the war power is the broadest power given to the Federal Government, and it was the common defense which brought about the union of these states. The Federal Government not only received the grant of all war power, but the states relinquished all power regarding war.

"I have held at all times that any non-offending state had the right to demand of the Federal Government that it step in and prevent the ruthless waste and overproduction of our most important munition of war.

"I would like to see the minerals section of the American Bar Association go on record as declaring without equivocation that the Federal Government has ample power to enforce the unit operation of pools and prevent the waste that now is unavoidable under the state laws.

"If the minerals section says that the Federal Government does not have this power, then I believe it to be the duty of the minerals section to bring this matter before the entire American Bar Association and prepare and support an amendment to our Federal Constitution that will permit the Federal Government to do anything and everything both in times of war and in times of peace, or in anticipation of war, necessary for our national safety."

American Oil Supremacy Threatened

Advance in Prices Would Be Signal for Flood of Foreign Competition Which Is Steadily Growing

By N. O. Fanning

New York Bureau, The Oil and Gas Journal. Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Sept. 5.—Russia has injected itself into the international oil situation by giving notice that every effort will be made by it to increase production and spread its refined products throughout world markets in competition with America, British and Dutch oil. This is a situation which could not have been imagined eight years ago, when the question of international control of oil was being widely discussed. Russia was not thought of as a factor in the dispute at that time.

With the possibility that the American oil situation will be radically changed through artificial regulation of production, foreign interests are taking on a new lease of life, with the prospect that low American oil prices will no longer prove the dominating element in European markets. Oil from fields of the United States can now be delivered more cheaply in Europe than that from any other field of any size.

The American fields, in the opinion of many foreign oil men, are in a period of peak flush production, and are undergoing a development pace which is bound to uncover the few big flush fields left and drain them within the next few years. This will operate to give foreign fields the chance which will be postponed if no artificial regulation is practiced here.

Potential Foreign Production

British, Dutch and Russian interests, controlling 90 per cent of the potential oil fields outside of the United States and South America, are appraising their holdings and find that production can easily be doubled within a few years by intensive development if need arises. These holdings are principally as follows (with potential annual output): Russian Oil Syndicate, 100,000,000 bbls. in Russia; Anglo-Persian Oil, 100,000,000 bbls. in Persia-India; Royal Dutch-Shell, 50,000,000 bbls. in Dutch East Indies.

In addition there are the large holdings of the Dutch-Shell combine in South America, probably capable of producing at the rate of 50,000,000 bbls. annually within a few years. The total potential production, within say five years, of these three interests alone, in the countries indicated, is 300,000,000 bbls., or almost half the annual rate of production during the past 10 years in the United States. Production could be increased far beyond this point in later years, according to foreign oil experts.

American holdings of potential oil properties outside the United States are confined principally to South America. On this continent it is believed American interests hold the upper hand, but so far as the European markets are concerned only Venezuela and Colombia loom as important factors in the next five years.

United States Threatened

One of the principal threats against America's supremacy is the possibility of a sharp decline in production within its borders. No other country's oil can be regarded as a threat under present conditions, with gasoline being sold at Group 3 refineries for as low as 4 cents a gallon. The first sign of any change will be an advance in domestic prices. Many oil men feel it is better for the United States to give up its position than continue to do business at a loss.

It is a fallacy, in the opinion of some oil men who take an international view of things, to think the United States can continue supreme in foreign markets in the event of a substantial advance in American oil prices. They base their belief upon the fact that Venezuela stands ready to throw into the gap large quantities of low-priced oil in competition with American oil, and that there are other countries with potential production ready to be tapped at short notice.

Geologists who have studied Venezuela's oil development say the supply of oil in proven fields is practically unlimited, even when thought of in terms of America's vast production record. Deeper producing sands, they say, are capable of yielding oil at a bigger rate than sands so far tapped.

Russia, in its Grozny district, has a potential oil field of large dimensions indicated by a recent large well brought in there. In addition, Russia, with central control, is putting big store in its petroleum and intends to launch an intensive development of unprecedented proportions at the first sign of any decrease in output in the United States.

The Anglo-Persian Oil Co. has large undeveloped oil reserves both in Persia and India, but is only awaiting good prices for actual development.

The Dutch-Shell combine has big undeveloped reserves in the Dutch East Indies; less is known of their extent, however.

In view of the situation, American oil producers are advised by those who have studied the oil situation from an international viewpoint that they cannot expect a protracted era of high oil prices for years to come, if ever again. At the same time it is yet too early to predict what the level of average prices will be compared with those existing at present, due to the numerous indeterminate factors bearing on quotations for crude and the various refined products. It may be prices will find a level higher than the present one, but this cannot be counted upon too firmly.

May Attack American Markets

American oil companies must also face the possibility of heavy importations of foreign oil in the event of a sharp decline in domestic output. Venezuela, Mexico and Peru are already contributing crude for American refineries; but importations are now on a scale much reduced by temporary market conditions.

If America had only South American oil to contend with in the event of a shortage in this country, it would not have to worry so much, in as much as American oil companies would share generously in this business. However, it is possible that oil will be shipped to the United States from European or Asiatic fields, as remote as this seems now. It is pointed out that the California markets could possibly be reached from the Dutch East Indies. But this is of course a possibility only of the distant future.

The chief threat against American companies is the importation of South American oil by companies of nationality other than American. The idea of American consumers using imported products is not unusual so far as the more unessential products are concerned, but when it comes to petroleum, things take on a more serious aspect.

Russia's Position Defined

In a remarkable copyrighted interview in the New York American Joseph Stalin, "Virtual Dictator" of Soviet Russia, stated recently that "I promulgated, about a year ago, a new foreign policy, based on the firm foundation of Lenin's new economic policy. It was essential that we should establish trade relations with the non-Soviet nations. We selected the sphere of oil as a primary exercise. The chancelleries of the great nations today are involved in oil diplomacy. The nation who can control an unlimited oil supply must become predominant in world politics.

"The United States of America, true, is supreme in possession of most of the oil supply at hand. But her resources must, I understand, within 25 years, become exhausted.

"Britain next controls the world's greatest output. But Russia is a potential possessor of a greater supply of oil than America and England combined. Our mining engineers assure us that Russia can supply the world, even at its present rate of consumption, for at least 150 years longer. England knows it; therefore, in enunciating our new foreign policy based on oil we harbored no illusion as to the gravity of the step we had taken.

"We knew that Britain was fast becoming an oil-burning nation, and within less than 15 years her entire shipping, as well as her navy, on which her very existence depends, must depend on oil-burning engines."

American oil men will perhaps have a good laugh at the idea of our production dwindling to nothing within 25 years. This eventuality has been prophesied for 50 years, with each phophesy placing the time of total exhaustion a few years farther off. But nevertheless the true situation is not so much dominated by the actual domestic production, as it is by the relationship between that production and production in other fields, together with its relationship to domestic and world consumption. If the United States continues to supply 80 per cent of the world's production indefinitely, it will surprise some of the most astute observers. In this even, all fear of foreign competition is groundless. Stalin may not be entirely correct, but students of the situation do not, on the other hand, consider his views entirely erroneous.

Situation Strictly Economic

In prophesying a turn in the balance of oil production in favor of foreign fields, oil men are not prophesying American dependence on outside nations, nor are they predicting dominance of the world oil situation by British, Russian or any other oil interests. What they are trying to anticipate is a hard, cold fact, namely, that American producers must take into consideration developments outside the United States of factors related directly to the return they are to receive in future years from the oil they produce.

The oil business, it is expected, will continue to be run by oil men on an economic basis. Leading American oil interests hope to keep the oil situation, so far as possible, outside the realm of international politics. They believe, first and last, in the justice of economic laws, and are willing to bow to them. They realize, however, that economic laws often relentlessly disregard international borders.

ALL ARRANGEMENTS FOR PETROLEUM EXPOSITION ARE ABOUT COMPLETED

Rapid progress is being made in the completion of final details incident to the holding of the fourth International Petroleum Exposition in Tulsa from September 24 to October 1, inclusive. There have been 221 contracts made for space by exhibitors, according to General Manager J. Burr Gibbons, who said the original goal of $75,000 from the sale of space had already been exceeded, contracts already made totaling $86,104. W. G. Skelly, president of the exposition board, stated it is apparent the exposition board did the popular and necessary thing in going out of the amusement business and making the big oil show a business proposition for the oil field manufacturers, the oil field workers, the company executives and others connected with every branch of the petroleum business.

W. G. Skelly

President, International Petroleum Exposition.

There will be considerable interest in the aviation feature of the exposition, due to the attendance of notables and a great assembly of airplanes. Col. Robert W. Stewart, chairman of the board of the Standard Oil Co. of Indiana, is to be one of from five to seven officials of that company to arrive September 24 on a flight from Chicago. The oil field fliers generally will attend the show, it is indicated. Airplane gasoline and lubricants will be featured in many exhibits.

J. Burr Gibbons

General Manager, International Petroleum Exposition.

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Southeastern Colorado Possibilities

Overlooked Section Has Been Studied by Geologists Since Finding of Oil in Cimarron County, Oklahoma, Well

By Dorsey Hager

The finding of oil late in February, 1927, in the Ramsey well in Section 27-5n-5e, Cimarron County, Oklahoma, just 8 miles south of the Colorado line and 40 miles southeast of Springfield, Baca County, Colorado, has attracted much interest in the oil possibilities of southeastern Colorado, an area which has been overlooked by oil men in the near past.

The Marland Oil Co. of Colorado has been actively leasing in this area for 18 months and has acquired several hundred thousand acres covering 20 or more structures taken under the geological direction of Alex McCoy, whose paleogeographic studies indicate that this area holds promise for future oil production. Although only a few test wells have been drilled, this area had been neglected by the major oil companies, largely, it would seem, because of two theories. First, that the Pennsylvanian sediments in this area were unfavorable source beds for oil and gas; second, because it was felt that the Cretaceous beds which generally overlie this area were not in conformity with the lower Permian and the Pennsylvanian beds. The first of these theories has been shown to be untenable by the finding of oil in the Ramsey Brothers' well, and by the showing in other deep tests, which prove that the marine Permian and the marine Pennsylvanian beds exist under this area, and are similar in nature to the beds producing oil at Amarillo and those producing oil in Russell County, Kansas; also that these beds carry good sands and sandstones that may act as oil and gas reservoirs. The second theory is discussed more fully under unconformities.

This paper is limited particularly to the study of the Pennsylvanian and the pre-Pennsylvanian areas of possible oil production in southeastern Colorado. An area along the Rocky Mountains from Florence, Colo., south to Raton, N. Mex., has possibilities of production in the Pierre shales and in the lower sands overlying beds of Jurassic age. However, as oil production in that area is more likely to occur under similar conditions to those found at Florence, Colo., where structural conditions seem to have little significance, oil possibilities along the Front Range will not be discussed further here. Oil and gas possibilities in this Front Range area are important, but now appear of far less importance than is the Pennsylvanian area on the Sierra Grande Arch, which is the subject of this discussion. The potential producing area on the Sierra Grande Arch is 100 miles long and 75 miles wide in which there is good reason to expect numerous oil and gas fields, particularly where structural conditions form traps for oil and gas retention. This area is purely prospective, but is no more so than were other areas which are now producing oil in commercial quantities, but were once unproven.

Structural Geology

A giant low-dip fold or geo-anticline called the Sierre Grande Uplift, or Arch, extends from New Mexico in a northeast direction into southeastern Colorado as shown by the sketch map, Figure 1, which is based on N. H. Darton's report, Bulletin 101, United States Geological Survey.

Superimposed on this giant fold, like the warts on a cucumber, are found numerous minor low-dip folds of distinctly Mid-Continent type. This great major anticline is called the Sierra Grande Arch and is analogous to the Sabine Uplift of Louisiana and to the Bend Arch of North Central Texas, and to the Amarillo Arch of Northwest Texas. Minor folds of this great arch should localize oil and gas as is the case in similar oil-producing areas. On the southeast side of the regional fold the regional dip is east and southeast and the reversals are to the west and northwest. On the northwest flank of the major fold, south and southeast reversals are the important features in the localization of oil. The question of the persistence of surface folding in depths or whether surface folding is affected by unconformity can only be determined by drilling, but there is no pertinent evidence that can be admitted which offers any logical reason for believing conditions of folding different in Southeast Colorado from those in other Mid-Continent oil fields. All evidence (see paragraph on unconformities) points to intensification of underground folding rather than weakening of such folding with depth.

Faults

Some faulting is found in this area. Several faults occur 2 miles southeast of La Junta, others a little farther away, and are found at various places throughout Southeast Colorado. Faulting here is generally associated with much erosion and in places can scarcely be distinguished from slumping of the beds. Erosion of the Carlisle shales has occasioned in many places notable slumping of the overlying Timpas limestone and in some places long dip slopes due to slumping may be formed. Numerous short fault-like breaks occur, especially along stream beds. However, there does not appear to be any major faulting in the area, but

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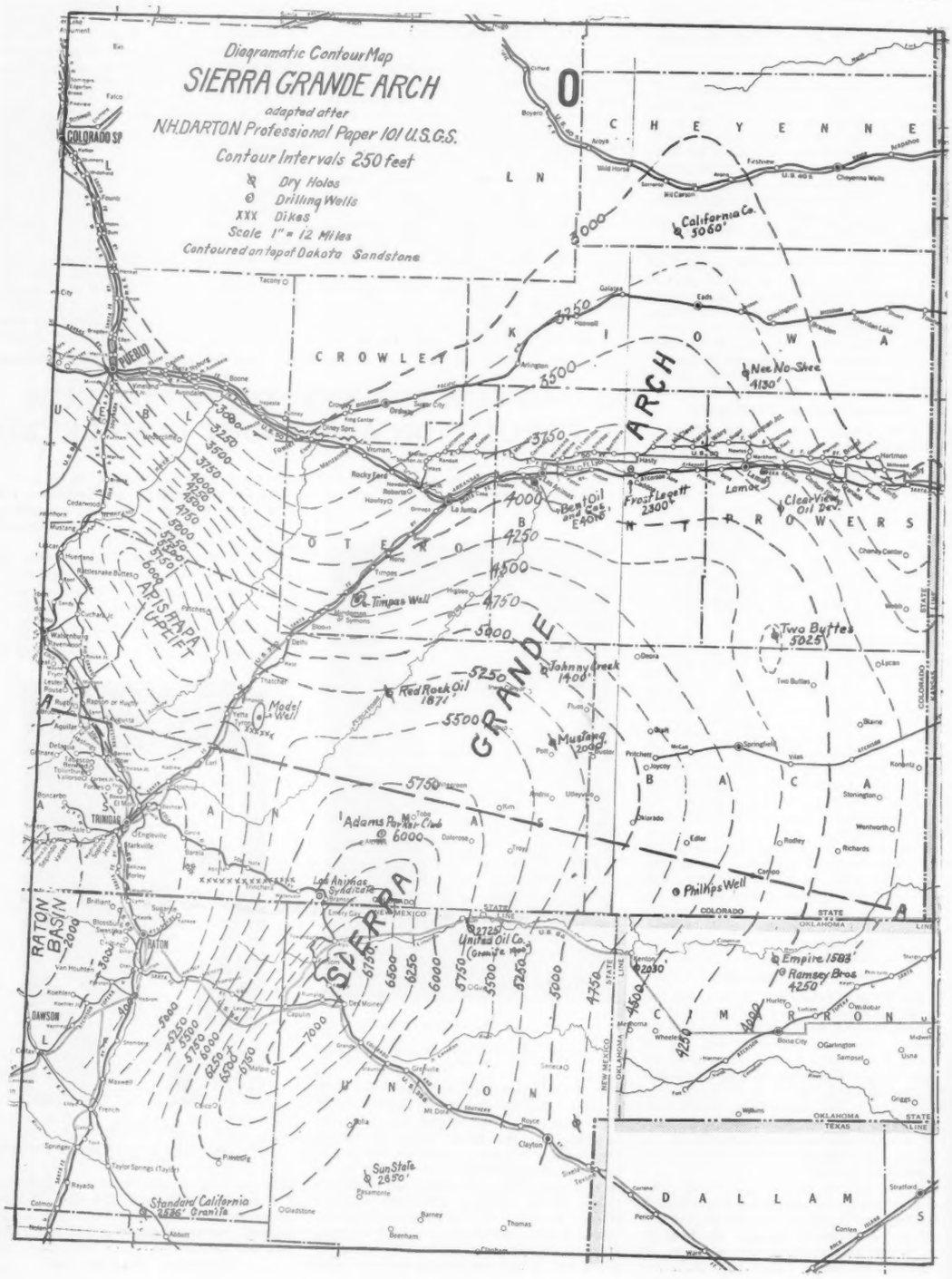

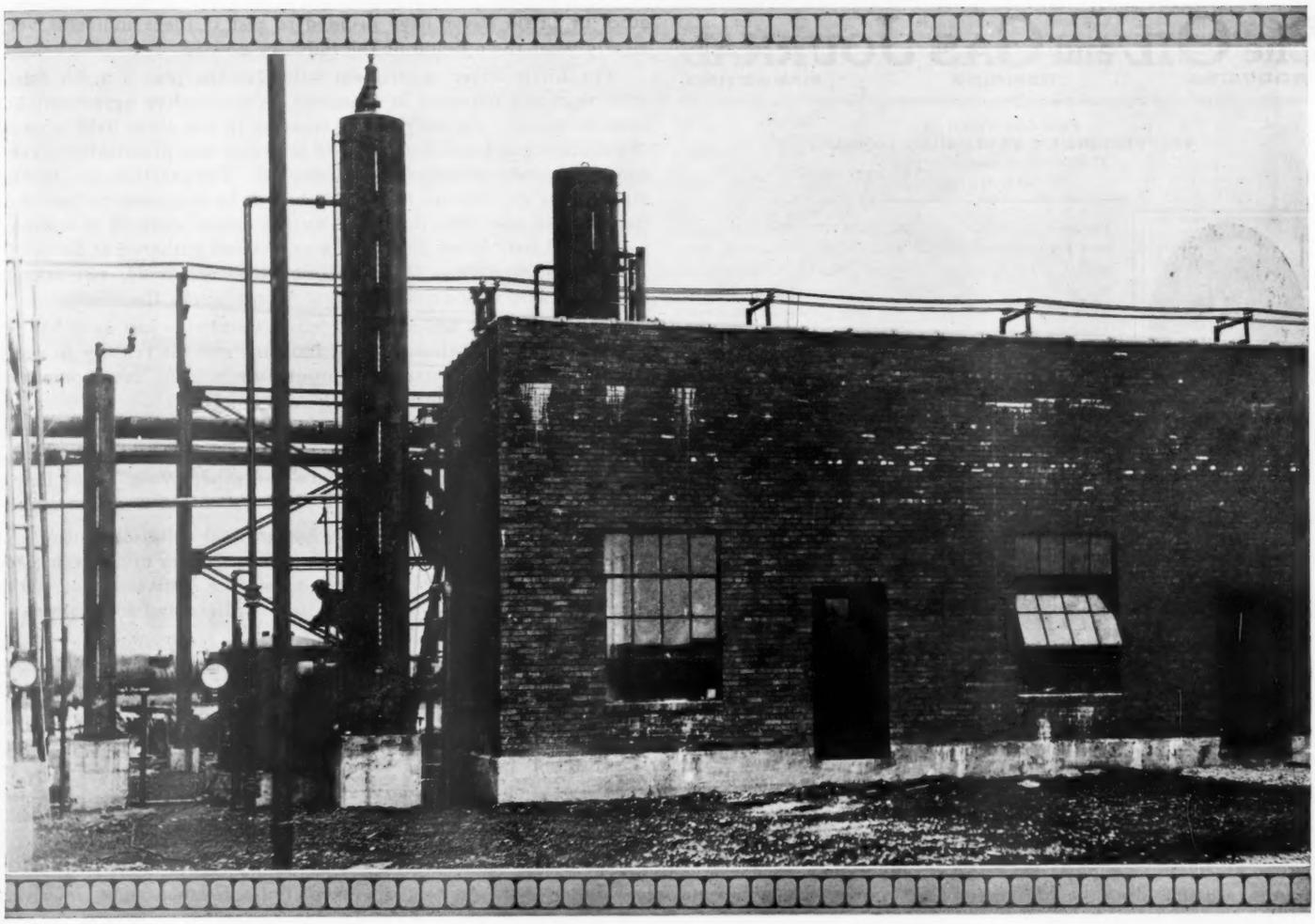

The Lincoln Refining Company [Ohio Oil Co.] installed this Newton Plant at — Robinson, Ill.

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PUTTING ON THE BRAKES

While the Federal Oil Conservation Board, the Minerals Section of the American Bar Association, and individual members of Congress are cudgeling their brains in drafting traffic rules for the oil industry, the industry itself has been playing safe by applying the brakes.

It is well that it has done so. Everybody seems at sea on the question of regulation. As Secretary Hoover says "there has been no agreement as to the constitutional basis for federal legislation affecting petroleum. That seems to be the big question at the start. The whole matter is one of conservation. No one wants regulation in the normal sense that regulation implies."

The Bar Association, after digesting the addresses of Secretary Work and James A. Veasey, authorized the appointment of a committee by the chairman of the Minerals Section to study the whole matter. Chairman Newlin has announced that he will consult with lawyers from the various oil sections before making his selection and it will probably be some time before this committee can be expected to submit a report.

In the meantime Congress is likely to develop an agitation over oil with the usual manufacture of campaign material at the industry's expense. Fortunately, there is no likelihood of any regulative legislation being enacted at the coming session as the President would be justified in withholding approval of any measure until the Oil Conservation Board has had time to submit its recommendations.

The prospect of legislative assistance is equally remote. Long before the slow-moving machinery of legislation could be hoped to act the industry can solve its own problem by restraint from within as it has done in Seminole and is now apparently about to do in Pecos County and probably in West Texas.

Despite the cynicism with which the initial movement for co-operative regulation was greeted when the first meeting was held at Washington and the subsequent conferences in New York and notwithstanding the reiterated chorus that "it can't be done," when the Seminole agreement seemed to be lagging in application, it is now agreed that the plan will work.

There may be differences of opinion whether the decline in Seminole would not have followed naturally but the fact that operators in Little River have decided to test it there indicates very clearly what the opinion of the industry now is.

The Little River experiment will give the plan a much fairer trial than any obtained at Seminole. Co-operative agreement has been adopted at the very outset whereas in the older field most of the damage had been done and the situation was practically beyond control before any control was attempted. The practices and mental attitudes of generations of oil men had to be overcome no less than the physical problems presented by the actual state of operations.

In the Little River district the experience gathered at Seminole is proving profitable. Co-operation was considered, not antagonistically, but with confidence that it was worth the effort.

Overproduction has overcome other industries just as it has for the moment overwhelmed the oil industry and the remedy in every case was the same, restraint in production and the development of new markets for its products.

That the oil industry has not sooner attempted the self-regulation it tried at Seminole and has put into effect at Little River and is likely to follow in Pecos County and other West Texas fields, was due to the fear that it would not be permitted to do so.

It has been hounded for years by political agitation and official persecution. It was afraid to give even the shadow of an excuse for another investigation which would call for answering so many questionnaires that its business would be disrupted for months.

Then under the present administration at Washington it saw other businesses getting a square deal and began to hope that it also might be allowed to state its case. The creation of the Federal Oil Conservation Board offered that opportunity and the helpful results of that publicity brought about an official attitude which led to the Washington and New York conferences, the appointment of an umpire at Seminole and the growing recognition throughout the industry that if the operating companies got together in co-operation to conserve the oil it would be for the best interest of the industry and indeed the only way out.

There never was any question of the common-sense view that overproduction was suicidal for the industry and for the country dependent upon the fullest use of its natural resources. Individuals may have thought, in keeping with the older day of rampant competition, that immediate gain was to be preferred to permanent results. But when the flood of overproduction reached a height threatening to engulf the whole industry in an unprecedented period of depression, when producing, refining and marketing companies saw their profits vanishing, excepting a limited fortunate minority, the old theory of "the devil take the hindmost" was affecting too many.

If it had been but one field and the end could have been foreseen it might have been different. But when West Texas loomed behind Seminole with unguessable possibilities, with California still menacing, Venezuela and Colombia replacing and perhaps exceeding Mexico in its peak, it became imperative that instead of waiting for the flood to ebb something must be done to keep it within bounds.

To wait for federal or state legislation, in view of the general disagreement upon their constitutionality and effect, would, as has been said, have been too late to be of any practical service in the existing emergency.

Besides, while the doctors disagreed as to the legal remedy, there was universal agreement that if the industry could do anything for itself it ought to do it. With that invitation and license to go ahead the industry could not well sit back.

The chief obstacle encountered has been within its own ranks, doubt as to the ability to get operators to act together and as to whether if they did the Government would not consider it a violation of the law. The crisis became so acute that mere doubts could not justify inaction inviting disaster. Seminole and Little River have shown that operators can co-operate. Public opinion, aroused by the campaign for conservation, approves co-operation to that end.

The industry never had such a chance to put its house in order as right now. Happily it is setting about it in the right spirit and with praiseworthy energy.

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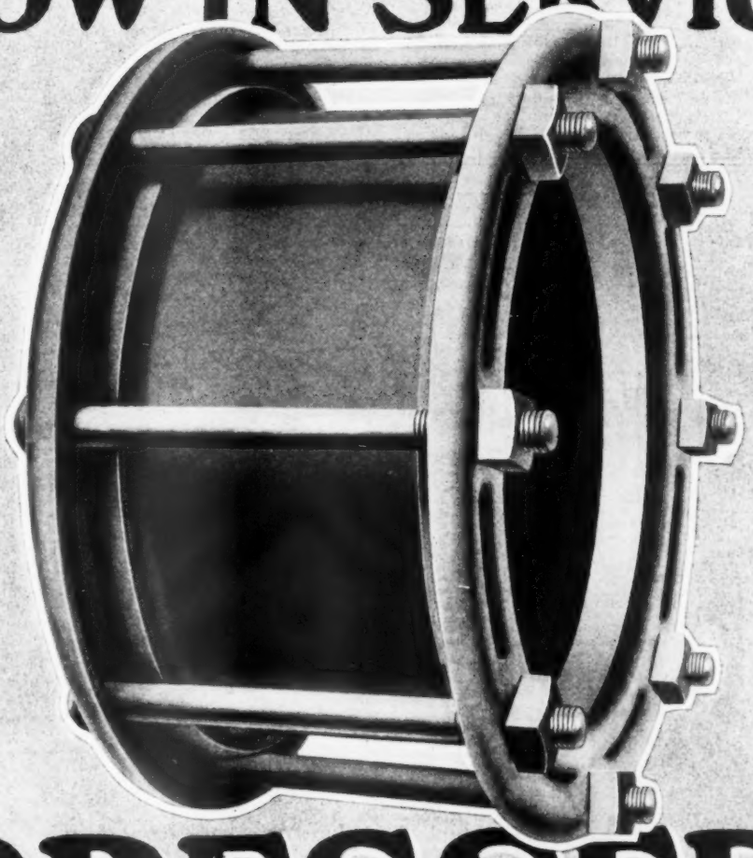

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Winkler Field Extended South and East

West Texas' Production Reaches New Peak With Gusher Wells in Crane and Upton. Pipe Line Companies Active

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., Sept. 5.—Extensions in Winkler County, gusher wells in Crane and Upton Counties, a new peak in West Texas production, announcement of new pipe line projects for that area and developments in Pecos County summarizes the gist of developments in West Texas during the past week.

The Winkler Field was extended to the south by Southern Crude Oil Purchasing Co.'s No. 1-T-88 B Hendricks and to the east by Murchison, Marland and Cranfill Brothers' No. 1 Grisham and Hunter. A drilling campaign of no small size is underway in Winkler at present, although new locations at the end of the week were fewer in number.

Southern company's No. 1 is located in the SE cor. NE NW, Section 4, Block B-12, topped the pay at 2,785 feet and was drilled to 2,857 feet and is making 100 bbls. daily by heads.

The eastern extension will probably call for the drilling of several offsets if it is completed as a good producer as it appears it will be. That well, No. 1 Grisham and Hunter, NW cor. SW Section 35, Block B-5, topped the pay at 2,855 feet and is estimated by one of the owners to be good for 100 bbls. per hour. The well was permitted to make one flow to clean the hole and was then shut down. It will be tested when additional storage is erected.

Texon Oil & Land Co.s No. 1 Central State Bank, SW cor. W. half, SE Section 41, Block B-5, three-quarters of a mile east of the discovery well, has been temporarily completed as a gas well at 2,814 feet. The well is making around 25,000,000 feet of gas and spraying some oil. Failure to obtain a pipe line connection caused the temporary completion of the well as a gasser.

Eight miles of the American Petroleum Co.'s 6-inch line from the Winkler Field to its loading rack and tank farm at Pyoto on the T. P. Railroad has been completed. The pump station is three-quarters complete, grades have been completed for two 55,000-bbl. tanks and the railroad spur has been constructed.

It is reported the Humble company has completed grades for two 64,000-bbl. tanks on its site in Section 8, Block B-12, south of the pool. The Humble company surveyed to extend its line from the Crane County station to the Winkler Pool, a distance of 52 miles. The line will be an 8-inch line.

New Crane County Pool

In Crane County the Gulf Production Co.'s No. 2 Waddell, NE cor. Section 10, Block B-25, which opened a new pool in Crane, was completed at 3,219 to 3,500 feet, flowing 30 bbls. daily. Deepening after getting the best pay in a few feet of soft lime failed to help the well.

The well is considered as a new pool opener, but it is not likely the pool will be rapidly developed. The Gulf company owns a block of some 50 sections and the well was drilled in the center of that block. Consequently there will be little forced drilling on the action of neighbors.

Simms and Atlantic Oil Producing Co.'s No. 7 University C was completed as a gusher late in the past week. The well is in the NE SE NW Section 47, Block 30, and made 7,240 bbls. the first 24 hours and was pinched in. It is the west offset to the Prairie Oil & Gas Co.'s No. 3 which came in making 500 bbls. per hour.

The Simms-Atlantic well topped the first gas at 2,785 feet and had the oil pay at 2,795 feet and was bottomed at 2,812 feet. During a 50-minute test the well was opened wide and made 740 bbls. The test was made during the first 24-hour gauge. The same companies' No. 8 is being completed as a big well.

On February 1, 1927, the two companies had one well in Crane County. On August 31 the joint properties of those companies had produced 2,044,000 bbls. of crude and a few days ago those companies had storage capacity of 568,000 bbls. and 518,000 bbls. in storage. Simms Oil Co. is building five 55,000-bbl. tanks and Atlantic company is building two 55,000-bbl. tanks.

Magnolia to Build Line

During the past week the Magnolia company announced its plans to build a line into the University Pool from its tank farm site at Midland. The line will be an 8-inch line and is expected to be in operation by October 1. Pipe has been ordered and contracts for grades for 10 tanks on the Midland tank farm site have been let. Three tanks are being built in the field and the line will have a capacity of 25,000 bbls. daily. The building of the line is taken to mean the Magnolia will enter that field as a buyer.

The best well of the week in Upton County was Prairie Oil & Gas Co.'s No. 3 Allie Lane in the southeast extension of the McCamey Pool. The well drilled into the second pay at 2,020-26 feet and flowed 4,300 bbls. the first 24 hours. It topped the pay at 1,965 feet and flowed 70 bbls. per hour from 1,965-80 feet, with some water. The water exhausted itself.

Only one well was completed in Pecos County during the week and that was Marland Oil Co.'s No. 1 Yates, NE cor. Section 60, Block 1, which had the pay at 960 to 1,024 feet and is pinched in to 232 bbls. daily. Eight new locations were announced for Pecos County at the end of the week, three in the proven area.

While no definite proration agreement was reached by Pecos producers at their meeting in Fort Worth last week, some sort of an agreement is expected to be reached before October 1. The producers committee will meet in Fort Worth next Thursday.

Much Pipe Line Activity

Ozark Pipe Line Co., a subsidiary of the Roxana Petroleum Corp., is planning to build a line from Pecos to some point on the Orient Railroad to the north, probably McCamey. However, the building of that line is not expected to start until the Roxana corporation's leases are drilled.

Humble Pipe Line Co.'s 8-inch line from Pecos north to Kemper station in Reagan County has been completed and is ready to be put in operation. The main line from Kemper south to the Gulf Coast will not be complete until around October 1. Around 7,700 bbls. daily are being run from the Pecos Field at present.

Construction work is being rushed on the Illinois Pipe Line Co.'s 8-inch line from Pecos to Del Rio of the Southern Pacific Railroad in Val Verde County. The line will have a capacity of around 20,000 bbls. daily. A large gang is rushing the work at Del Rio. A 2,000,000-bbl. tank farm will be built at Del Rio.

Ten miles of the line has been buried north from Del Rio and the pipe has been laid beyond Devil's River. Pipe has been laid through Crockett County and most of it has been buried. A high tension power line will parallel the oil line and the company's telephone system along the line is being rapidly completed.

Production at New Peak

Production in West Texas climbed to a new peak last week due primarily to the gains in Upton and the slight gain in runs from Pecos County. Crane County dropped slightly under its peak, but it is expected to reach a new peak next week when the production of two large wells is accounted for. The West Texas estimated production last week was 176,394 bbls.

The recent price cuts in West Texas crude have shown little effect in curtailing wildcatting in that area at present. However, the cut had its effect in the virtual cessation of leases and royalty sales as a whole. Major operating companies have closed down tighter on buying acreage and only acreage that appears very good is finding a market.

Last July the total wildcat operations in the San Angelo district totaled 128 and were divided as follows for first week of that month: Locations, 10; inactive locations, 18; rigs, 10; wells drilling, 90. The first seven-day period in September showed a total of 121 operations in the same district and divided as follows: Locations, 2; inactive locations, 14; rigs, 10; wells drilling, 95.

In Andrews County, Zweifel & Cartes' No. 1 Cowden, SE SE, Section 18, School, Block A-52, got a small show of noninflammable gas at 3,625 feet. The well has been shut down at 3,635 feet for engine repairs.

Runnels County

Runnels County continues to be the "hot spot for San Angelo operators. L. D. Ladd and associates' No. 1 R. M. McMillan, NW part of the Domingo Diaz Survey, flowed 400 bbls. of 42.5 gravity oil the first 72 hours from pay topped at

WILDCAT OPERATIONS IN WEST TEXAS

Week ending September 3, 1927

Company, Farm and Location—	Remarks—
ANDREWS COUNTY	
Calvin & Belt's No. 1 Ratliff & Bedford, C NE, Sec. 16, Blk A-54	Shut down for water 350 ft.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 73, Public School Land	Shut down to repair rig 410 ft.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School land, elev. 3,167 ft.	Drilling 600 ft.
B. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-35, Public School Land	Shut down 1,020 ft. for 10-in. casing.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Public School Land Sur., elev. 3,156 ft.	Top salt 1,375 ft.; shut down for engine repairs 3,635 ft.; encountered pocket of air 3,635 ft.
BREWSTER COUNTY	
Mid-Kansas O. & G. Co.'s No. 1 Turney, Sec. 77, Blk. 213, T. & St. L. Sur.	Rig.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Drilling 920 ft.
Wilcox & Anderson's No. 1 Gage, Sec. 8, Blk. 300, T. C. R. R. Sur.	Drilling 625 ft.
COKE COUNTY	
W. H. Brown et al's No. 1 W. L. Foster, SE cor. Sec. 142, Blk. 2, H. & T. C. Sur.	Shut down for casing 425 ft.
Danciger O. & R. Co.'s No. 1 Mrs. Byrnes, Clinton Sur.	Shut down for 12-in. 855 ft.
Lipan Oil Co.'s No. 1 S. M. Conner, Sec. 71, Blk. 2, H. & T. C. Sur.	Cleaning out 1,215 ft.
CONCHO COUNTY	
The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur., elev. 1,718 ft.	Shut down 1,930 ft.
CRANE COUNTY	
Marland Oil Co.'s No. 1 Union Land, E cor. of W ¼ Sec. 28, Blk. 35, H. & T. C. Sur.	Fishing for tools 330 ft.
CROCKETT COUNTY	
George Anderson and Marland Oil Co.'s No. 1 University	Hole full sulphur water 1,800 ft.; drilling 2,170 ft.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I. & G. N. Sur.	Shut down 2,110 ft.
Corbett & Gill's No. 1 Todd	Shut down 641 ft.
Corbett & Gill's No. 1 University	Shut down 641 ft.
Gulf Production Co.'s No. 2 Powell-D	Top salt 1,060 ft.; fishing for tools 2,290 ft.
Gulf Production Co.'s No. 1 G. L. Thompson, SW cor. Sec. 71, Blk. 1, I. & G. N. Sur.	Show live oil 853 ft.; will cement 8-in. at 853 ft.
Epeneaur et al's No. 1 Noelke, SW Sec. 30, Blk. GG, G. C. & S. F. Sur.	Drilling 215 ft.
George A. Henshaw and Geyer Oil Co.'s No. 1 Noelke-Murphy, 660 ft. S and E of NW cor. Sec. 10, Blk. PP, T. C. Ry. Sur., A-5,148	Drilling 450 ft.
J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur., elev. 2,783 ft.	Shut down 2,600 ft.
Magnolia Petroleum Co.'s No. 2 Shannon	Show oil 2,385-90 and 2,992 ft.; total depth 4,100 ft.; fishing 20 joints 8-in. casing.
Newman Oil Co.'s No. 1 B. C. Clark	Location.
William Shaffer et al's No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur., elev. 2,344 ft.	Total depth 2,344 ft.; plugged back to 2,208 ft.; shot 10 qts. 2,170-95 ft.; shut down.
William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, University Land	Top salt 1,060 ft.; first oil show 2,190-96 ft.; second 2,225-29 ft.; shut down; about 30 ft.; oil in hole.
W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V	Drilling 100 ft.
W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O, G. H. & S. A. Sur., elev. 2,105 ft.	Rainbow show 454 and 540 ft.; cleaning out 1,375 ft.
Kirby Oil Co. and Taylor-Link Oil Co.'s No. 1 Powell	Top salt 1,050 ft.; drilling broken sandy red rock 2,370 ft.
P. H. Williams' No. 2 L. P. Powell	Top salt 1,355 ft.; drilling 2,435 ft.
McMammon Oil Co.'s No. 1 Blakeney	Rig; drilling water well.
Young & Donnelly's No. 1 J. M. Shannon, C Sec. 11, Blk 9, D. & S. E. Sur.	Drilling 100 ft.
CULBERSON COUNTY	
James H. Gardner et al's No. 1 Radford, C SE Sec. 29, Blk. 62, Public School Land Sur.	Shut down at 585 ft. for 10-in. casing.
Scott & Dittman's No. 1 Miller, SW cor. NW NE Sec. 1, School Blk. 97	Spudded and shut down.
DAWSON COUNTY	
R. R. Penn's No. 1 Wright, elev. 2,842 ft.	Top salt 1,750 ft.; set 8-in. 2,449 ft.; drilling 2,905 ft.
DENTON COUNTY	
Hart Brothers' No. 1 A. B. Wilkinson, S. McKracklin Sur.	

(Continued on Page 142)

2,545 feet. The well was an old abandoned hole deepened 25 feet.

The well will not be completed until L. D. Ladd returns from California. In its incomplete stage the well is falling off in production to some extent and is flowing by heads. It is without pipe line connections. It is probable that a line will be built to Ballinger where a loading rack will be built. Six-inch pipe was set at 2,420 feet and the remainder of the hole is open and considerable cavings are in the hole.

Since the wildcat find the immediate area has been the scene of much trading. More trading has been reported there than in any other area of West Texas recently. Production is believed to be coming from the Cisco lime and the structure is expected to be small. The owners of the well drilled it on a 3,000-acre block. Two new locations were reported from Runnells County at the close of the week.

The Grosvenor area northeast of the Fry Pool, was given an important extension to the northeast when Sinclair Oil & Gas Co.'s No. 2 M. L. Smith, S. A. & M. G. R. R. Survey, topped the pay at 1,318 feet and drilled into it only a short distance. The well is reported to have started off making between 40 and 50 bbls. per hour, according to first reports from the field. The well is being deepened.

Forrest Oil Corp. extended the same area two locations to the north when Nos. 8 and 9 Smith were completed as 500 and 130-bbl. wells respectively. Five other wells were completed in that area during the week, two by the Roxana Petroleum Corp. and three by the Selby Oil Co.

Six locations were made along the south line of the E. L. Smith 60 acres in the north part of the pool and six offset locations are being made by the Roxana corporation. Roxana corporation has abandoned its plans to build a natural gasoline plant in the pool and has cancelled the orders for the material.

Empire Gas & Fuel Corp.'s deep producer in Callahan County, No. 1 Johnson, NW cor., Section 146, G. H. & H. Survey, is holding up well. Two strings of tools are in the hole. The water is slowly decreasing as shown by three daily gauges, as follows: 435 bbls. of oil and 170 bbls. of water; 557 bbls. of oil and 135 bbls. of water; 505 bbls. of oil and 100 bbls. of water. The well is making around 20,000,000 feet of gas and the gravity of the crude has dropped from 49 degrees to 47 degrees.

Roth and Faurot's No. 1 Sealy Smith, Section 19, G. H. & H. Survey, Coleman County, brought about a small but brisk play in its immediate area last week. The well is rated as a 55-bbl. well making some water from sand at 1,068-71 feet. Roxana Petroleum Corp., J. K. Hughes, Murry and Gamenson, and Amerada Petroleum Corp. bought extensively in that territory.

New Locations

Eight of the new locations in West Texas during the week were in Pecos County, and are as follows: Marland and McMan Oil & Gas Co.'s No. 5 Yates, 275 feet north and 330 feet west of NW cor., Section 35, Block 194, and located in Section 34½. Same companies' No. 6 Yates, 275 feet north and 330 feet west of NE cor., Section 36, but located in Section 34½, Block 194. George Anderson's No. 1 McKenzie, CSE N half, Section 6, Block 604, G. C. & S. F. Survey. Moody Oil Corp.'s No. 1 B. F. Corder, C SW, Section 77, Block 2. California Co.'s No. 2 Smith, 275 feet from north line and 330 feet from west line, Section 35, Block 194. George Henshaw and associates' No. 1 Corder, C SW, Section 74, Block 2. World Oil Co.'s No. 1 Kloh, 2,310 feet from north line and 2,310 feet from east line, Section 47, Block 48, Township 8, T. P. R. R. Survey. Douglas Oil Co.'s No. 1 John T. Sullivan, 330 feet from south line and 330 feet from west line of SE, Section 6, Block 194.

North and West Texas production showed a daily average gain of 4,185 bbls. during the past week due principally to the gains in West Texas. Cooke County in the Wichita Falls district showed its first decline in the past year. That district showed a general decline.

WEST TEXAS COMPLETIONS

Crane County

Eastland Oil Co. and Collett's No. 6 University was shot with 90 quarts at 2,887-2,950 feet and made 700 bbls. initially. Gulf Production Co.'s No. 29 McElroy made 160 bbls. initially after a shot at 2,921 feet, total depth. Same company's No. 34 McElroy made 140 bbls. after a shot at 2,912 feet, total depth. Gulf Production Co.'s No. 2 Waddell, NE cor., Section 10, Block B-25, topped the brown lime at 3,077 feet; topped the gray lime at 3,095 feet; had the first oil at 3,194-3,200 feet; topped the pay at 3,219 feet and bottomed at 3,500 feet. The well was completed making 35 bbls. daily. Landreth Production Co.'s No. 14 State Lands made 2,225 bbls. the first 24 hours from pay at 2,785-2,937 feet. The pay formation was shot with 150 quarts and the well responded making 4,409 bbls. Magnolia Petroleum Co.'s No. 4 O'Keefe University made 50 bbls. initially from pay at 2,958-3,105 feet. Tidal Oil Co.'s No. 2 University-I was shot with 300 quarts at 2,780-2,906 feet and flowed 665 bbls. the first 24 hours. The formation was shot the second time with 420 quarts and the well made 1,080 bbls. initially. Tidal Oil Co.'s No. 2 University-C topped the pay at 2,802 feet and bottomed at 2,966 feet. The formation was shot with 120 quarts at 2,856-2,966 feet and the well flowed 140 bbls. the first 13 hours. After the third shot the well was completed making 350 bbls. daily.

Garza County

Pandem Oil Co.'s No. 1 Justice, SW NW, Section 2, Block 6, H. & G. N. Survey, was dry and abandoned at 2,765 feet.

Jones County

Kirk and Bowers' No. 1 J. H. Milsap, Justo Rodrguez Survey, League 357, was dry and abandoned at 3,000 feet.

Mitchell County

California Co.'s No. 8 Womack was shot with 280 quarts at 2,918-3,063 feet and swabbed 82 bbls. the first 24 hours.

Pecos County

Marland Oil Co.'s No. 1 I. G. Yates, NE cor. Section 60, Block 1, I. & G. N. Survey, topped the pay at 960 feet and was bottomed at 1,024 feet. The big pay was found at 1,017 feet and the well completed flowing 232 bbls. daily through a three-sixteenth-inch choke.

Upton County

Gulf Production Co.'s No. 4 J. F. Lane was completed in gray lime at 1,960 feet flowing 6,240 bbls. daily. Prairie Oil & Gas Co.'s No. 3 Allie Lane topped the pay at 1,965 feet and was drilled to 1,980 feet making 70 bbls. per hour and some water. The well was deepened to 2,026 feet and flowed 4,300 bbls. the first 24 hours, no water showing. Prairie company's No. 4 Allie Lane topped the pay at 1,962 feet and bottomed at 2,038 feet. The formation was shot with 50 quarts without results and the well was completed as a 25-bbl. pumper. The Texas Company's No. 3 J. M. Perry made 908 bbls. the first 24 hours from pay at 1,940-73 feet.

Winkler County

Gulf Production Co.'s No. 3 T. G. Hendricks topped the pay with a show of oil and gas and was shut down. It has been temporarily abandoned and will be completed at a later date. Texon Oil & Land Co.'s No. 1 Grisham and Hunter was completed as a 25,000,000-foot gas well at 2,814 feet.

NORTH CENTRAL TEXAS AND WEST TEXAS

ESTIMATED PRODUCTION
Week Ending September 4, 1927.

Ranger District—	Prod.
Brown County	21,990
Callahan County	5,145
Coleman County	1,221
Comanche County	1,453
Palo Pinto County	489
Ranger	11,151
Shackelford County	6,402
Stephens County	9,070
Total Ranger District	56,921
Wichita Falls District—	
Archer County	25,256
Baylor County	36
Clay County	555
Cooke County	6,040
Jack County	985
Montague County	10,963
Throckmorton County	1,646
Wichita County	29,462
Wilbarger County	11,743
Young County	14,292
Total Wichita Falls District	101,028
Total North Central Texas	157,949
West Texas District—	
Big Lake Field	25,583
Crane County	105,825
Crockett County	1,466
Ector County	off prod.
Glasscock County	38
Howard County	3,132
Jones County	1,553
Loving County	20
Mitchell County	3,818
Pecos County	6,010
Scurry County	45
Upton County	24,815
Winkler County	4,089
Total West Texas	176,394
Grand total North & West Texas	334,343
Increase	4,185

Archer County

Perkins & Cullum's No. 1 Mankins was dry and abandoned at 1,851 feet. Continental Oil Co. and H. Hines' No. 1 Wilson was dry and abandoned at 1,601 feet. McConnell Brothers' No. 1 Wilson was dry and abandoned at 1,535 feet. Royal Petroleum Co.'s No. 14 Wilson, made 145 bbls. initial from sand at 1,525-39 feet. W. C. Young's No. 4 Abney, was dry and abandoned at 1,770 feet. Bridwell & Heydrick's No. 1 Abercrombie & Taylor C, was dry and abandoned at 1,434 feet. Roxana Petroleum Corp.'s No. 1 Farmer was dry and abandoned at 1,601 feet.

Coleman County

Brooks, Jamison and others' No. 1 Odom, was dry and abandoned at 1,110 feet. Henshaw & Gracey's No. 1 Gates, was dry and abandoned at 1,237 feet. Mimms' No. 1 Kelly & Grady, was dry and abandoned at 1,475 feet.

Brown County

Forrest Oil Co.'s No. 8 Smith, made 500 bbls. initial from sand at 1,333-44½ feet. Same company's No. 9 Smith, made 130 bbls. the first 24 hours from sand at 1,343-49 feet. Gholson and associates' No. 1 Collier, was dry and abandoned at 1,244 feet. Gilman & McMurray's No. 1 Haynes, was dry and abandoned at 1,295 feet. Graves' No. 1 Turner, was dry and abandoned at 450 feet. Humble Oil & Refining Co.'s No. 18-B Kilgoe, was completed at 1,181 feet without production and is to be used as a key well for gas lift. Josey & Flinchbaugh's No. 1 Williams, was dry and abandoned at 1,476 feet. Roxana Petroleum Corp.'s No. 4 Smith, made 583 bbls. initial from sand at 1,330-49 feet and No. 5 Smith did 315 bbls. initially from sand at 1,335-55 feet. Selby Oil Co.'s No. 12 Ellis, was good for 200 bbls. initial at 1,317-27 feet; No. 13 Ellis made 325 bbls. at 1,322-29 feet and No. 14 Ellis was good for 250 bbls. the first 24 hours at 1,318-35 feet. Wilbern Brothers' No. 1 Shield-Maddox was dry and abandoned at 1,695 feet. Crites & Cutbirth's No. 1 Shield, was dry and abandoned at 1,450 feet. Work's No. 1 McGaughey, was dry and abandoned at 1,405 feet.

Callahan County

Navarro Oil Co.'s No. 4 Bennett Booth, was shot with 30 quarts at 1,643-64 feet and made 76 bbls. initial.

Clay County

H. R. Edwards' No. 1 Wetsel, was

(Continued on Page 139)

NEW WOODBINE SAND POOL OPENED NEAR MEXIA. LATE FIELD NEWS

MEXIA, Tex., Sept. 3.—A new Woodbine sand pool has been opened about 5½ miles southwest of Mexia by the Reiter-Foster Corp., Lewis and the Moutray Oil Co. in what is known as the Cedar Creek area. The discovery well found the Woodbine at 2,874 feet and started at 125 bbls. a day of oil and about 9,000,000 feet of gas. After the Nigger Creek Pool was opened by the Transcontinental Oil Co. the Reiter-Foster Co.'s geologists mapped out a fault, or maybe two faults, south of Nigger Creek which showed good Woodbine possibilities and a well was drilled on the most southwesterly of the two structures. It was a failure, but the test between the dry hole and the Nigger Creek Pool developed sufficient production to warrant a drilling campaign. Already the discoverers have rig up for No. 2 Ward. The Rycade Oil Co. has a rig for its No. 1 Ward. Transcontinental Oil Co. is rigging up on No. 1 Lewis and the Why Not and 44 Oil companies, controlled by Mrs. J. K. Hughes and other women, are rigging up No. 1 E. W. Lewis. The Pure Oil Pipe Line has been extended from the Nigger Creek Pool to the new Cedar Creek development.

About 7½ miles directly south of Mexia, Ben Hunt's No. 1 Priddy is drilling at 2,775 feet, very close to Woodbine depth. This test is being drilled on land leased by the Humphreys Corp., which mapped out a small faulted Woodbine structure. The Humphreys Corp. and the Magnolia Petroleum Co. own the bulk of the acreage. The first test is just south of the Navasota River.

Neither the Cedar Creek nor the last mentioned structure is expected to be large in area or in production.

Just west of Mexia, the E. L. Smith Oil Co.'s Trinity sand test, which is very close to 5,900 feet in depth, is producing 12 bbls. of oil flowing by heads with the hole full of oil. It is reported to have quit making salt water. This test is interesting in that it shows the presence of oil in the Trinity, but it is not likely to lead to any further drilling until market conditions improve because of the expense entailed in drilling so deep.

Drilling on Boggy Creek

In Cherokee County the Humble Oil & Refining Co.'s No. 2 Reynolds Mortgage Co. was drilling in chalk topped at 2,965 feet. Casing, 8½-inch, was set at 2,968 feet and the well had reached a total depth of 3,251 feet. The same company's No. 2 Earl & Ragsdale had a sand at 4,510-14 feet, but drilled on to 4,566 feet where the drill stem stuck. The Humble company was drilling at 510 feet in shale and boulders in No. 2 Elliott & Clark. These tests are all in the Boggy Creek area, where the Humble has a well, No. 1 Elliott & Clark, that promised a big producing field, but which is a 65-bbl. pumper at present and producing a large quantity of water.

Cosden and others are at 4,010 feet, drilling in shale, in their test 9 miles northwest of Palestine, in Anderson County.

The Magnolia Petroleum Co.'s No. 1 Somers was coring in red bed at 4,339 feet 2 miles south of Ponta, Cherokee County.

In Henderson County, W. K. Cayton's No. 1 Huffer-Nash near Mabank had a salt water sand at 2,873-92 feet.

In Rusk County, The Texas Company's No. 1 Schultz, 19 miles southwest of Henderson, was drilling in gumbo and boulders at 1,682 feet. C. M. Joiner was drilling sandy shale at 350 feet in No. 1 Brauford, 6 miles northwest of Henderson.

In Walker County, Head & Thompson have made location for a test on the Thompson Lumber Co.'s land 20 miles northeast of Huntsville.

The Priestly Oil Co. has shut down at 1,010 feet in No. 1 Chappell, in the southwestern part of Wood County.

Four operators have filed notices of intention to drill in East Texas territory, J. R. Bahan's No. 2 Hickman, E. Pollock Survey, Henderson County; Magnolia Petroleum Co.'s No. 7 Lewis, James Johnson Survey, Panola County; State Line Oil & Gas Co.'s No. 3 W. B. Taylor, T. D. Wilson No. 778 Survey, Harrison County, and F. A. and F. M. Fuller and others' No. 3 Furrh, James Short Survey, Harrison County.

NORTH AND WEST TEXAS

FORT WORTH, Tex., Sept. 6. — In southeastern New Mexico The Texas Company's No. 1 Rhode, which had 25,000,000 feet of gas at 3,105 feet, is decreasing in volume but the gas is saturated to some extent with oil.

In Winkler County, Texas, Marland,

(Continued on Page 144)

Gray County Wildcat Makes 250 Bbls.

Roxana's Semiwildcat Well in McIlroy Pool Extension Still Averaging More Than 3,000 Bbls. Production Lower

By James H. Dameron
Staff Correspondent, Texas Panhandle Fields

AMARILLO, Tex., Sept. 5.—Another drop in Panhandle production, the performance of another big well in the McIlroy Pool of southeastern Hutchinson County and the developments of a Gray County wildcat supplied the interesting field news from the Panhandle area during the week.

Gray County Petroleum Co.'s No. 1 A. Chapman, Section 70, Block 25, H. & G. N. Survey, and in wildcat territory, has been completed as a 250-bbl. producer. It had the pay in granite wash at 2,841-56 feet, steel line measurement. It is in the general trend of the Panhandle Field.

The well is regarded as one of the most important wildcat completions in that section of the field in several months. It is a couple of miles west of the Nabob Oil Co.'s well in Section 68, which was completed as a fair producer some months ago. Initially, the Gray County Petroleum Co.'s well is a better well than the Nabob well.

Prairie Pipe Line Co. is running a gathering line to the well. Gray County crude was the only crude in Panhandle not to be cut during the recent price cuts. It is still purchased on a gravity basis because that crude is a far sweeter crude than that produced in other Panhandle areas.

South and east of that well a few miles, Rensaul Petroleum Co.'s No. 1 Husselby, Section 55, same survey, is estimated to be a 20-bbl. well after a third shot. The formation was shot with 250 quarts at 2,560 feet to 2,620 feet. The hole bridged after the shot and is being cleaned out. The farthest east production is Travis and associates' No. 1 Back in Section 44, which is a small pumper. It is approximately 2 miles southeast.

Only routine work was reported from the Gulf-Saunders area east of the Pampa Pool in Gray County, but in the Majestic area south of the Pampa Pool, Pollard and associates' No. 1 Bowers, Section 89, Block B-2, H. & G. N. Survey, was swabbed dry after standing with 1,800 feet of fluid in the hole for several days. The pay was at 3,045-60 feet. The first showing was found at 2,965-70 feet. Riley & Heck's No. 1 Hopkins, Section 66, Block B-2, is drilling ahead in red rock and granite wash at 3,120 feet and is estimated to be making 25 bbls. daily.

Operators Prorate Cost

On the north end of the Panhandle, in Hartley County, the Deep Rock Oil Co.'s No. 1 Lyman and Balfour, Section 9, Block 2, is to be deepened from 3,765 feet to 4,000 feet. The well had a showing of oil at 3,648-50 feet, but drilled into a little water without an increase in the oil showing. It was drilled on down to contract depth at 3,765 feet and shut down.

Eight major companies and independent operators in the Panhandle pooled to have the test drilled to 4,000 feet. Each operator owns considerable acreage in Hartley, Moore, Oldham and Potter Counties and each company will pay $1 per foot to have the test drilled on down.

Pending the outcome of the Deep Rock Co.'s test, Roxana Petroleum Corp. is holding back plans to drill on its Matador ranch lease in northeastern Oldham County. In central Oldham County, Prairie Oil & Gas Co.'s No. 1 Landergin, Section 46, League 310, is drilling lime at 4,460 feet and carrying around 1,800 feet of water in the hole. Apparently the water is exhausting itself.

Two tests in Sherman County encountered gas showing during the past week. Gibson Oil Corp.'s No. 1 Bivins, Section 35, Block 3-B, encountered a showing of gas at 2,015-25 feet. The showing was estimated at 100,000 feet of gas and the test is being deepened. Phillips Petroleum Co.'s No. 1 Price and Fuqua, Section 33, Block 2-B, G. H. & F. Survey, got a small show of gas at 2,105 feet. The test is being underreamed to 2,215 feet after cleaning up a fishing job at that depth resulting from a lost bailer.

Phillips Petroleum Co.'s deep test in the Borger area, No. 12 Elva Whittenburg, E. Tomlinson Survey, is drilling below 4,300 feet without any deep shows of oil or gas. Early this week the test was drilling at 4,302 feet in granite wash and making hole slowly.

Interesting Test

Another interesting Hutchinson County test is expected to be started up again in the near future. It is Panfield O'l Co.'s No. 1 Luginbyhl, Section 50, Block M-23, T. C. Survey, which has been shut down for several months. The test is northeast of the Skelly Oil Co.'s wildcat well in Moore County and due north of the Merchant Pool in Hutchinson County. If the hole can't be saved at its present depth, the rig will be skidded and the second hole drilled.

In Moore County, Shadler Brothers' No. 1 John Lowery, Section 237, Block 44, was holding the attention of operators in that area. The well is in the Dumas townsite and is making around 5,000,000 feet of gas from 2,985 to 3,030 feet. The test will be drilled on through the gas and 6-inch casing landed and the test carried on down in search of the pay horizon that is producing in the Morton & Co.'s well in Moore County. The big lime in No. 1 Lowery was topped at 2,680 feet, or 958 feet above sea level. The Morton & Co. well had the big lime 967 feet above sea level.

South Plains Area

The South Plains territory is steadily growing in importance as a wildcat territory. Several companies have scouts scattered over that wide area and close checks are being made of the drilling tests. No little attention is being given the shallow shows found in Hale County.

Donnell Petroleum Co.'s No. 2 Mullican had a shallow show but did not find commercial production. The test is being drilled deeper and the company plans to drill two more tests in the immediate vicinity within a short time.

Lamb County, west of Hale County, will probably get a couple of more tests within a few weeks. Talbot and Simms will drill No. 2 Ellwood in Section 7, Block T, T. A. Thompson Survey. Dan Freel plans the drilling of a test in Section 10, Block T, T. T. Thompson Survey and George McCamey is planning a test south of that. Location has been made for Reeves and Apperman's No. 1 Echols, Section 64, A. & B. Survey, Motley County, and Elpo Oil Co. is building a rotary rig for No. 1 Nevelle in Lynn County.

Only a handful of completions were reported from the Panhandle during the past week but despite the flush production of a large well in the McIlroy Pool, Hutchinson County production declined and pulled the daily average of the Panhandle down to below 100,000 bbls. for the second time this year. The 1,350 wells in the field were making 98,545 bbls. during the past week, a decline of 2,880 bbls. over the previous week. Production by counties is as follows:

County—	Bbls.
Carson	8,980
Gray	9,645
Hutchinson	78,265
Moore	20
Potter	30
Wheeler	1,605
Total	98,545
Decline	2,880

About 50 Wells Shut Down

It is estimated that there are around 50 wells in the field shut down on top of the pay. Some of these wells have not been completed because pipe line connections could not be obtained for them and others have been shut down because the producers' field storage was full. Around 100 wells in the entire Panhandle area were below 2,000 feet last week.

Storage in the field is still increasing and has been all through August. A few companies are buying additional field storage and one company is adding extensively to its storage by building 55,000-bbl. tanks. A small line was built from the Amarillo Producers & Refiners Corp.'s refinery at Borger to the Apex Oil Co.'s lease in Section 11, Block Y, to empty a storage tank on that lease.

It is reported that several producers in Carson County are planning to store as much of their production as they can economically do until the time higher prices will permit the sale of the production at a larger profit. While Carson County crude was generally affected by the recent price cut the Humble company announced that a gravity schedule is to prevail in the purchasing of oil in that area from Skellyville east to the Gray County line. The posted price is 75 cents per barrel for Panhandle crude save that particular area and Gray County crude.

From Skellyville east to Gray County the posted price is 75 cents per barrel for crude up to 37.9 gravity. Starting at 38.0 gravity the price will be 77 cents with a 2-cent differential for each degree of gravity above that. That gravity schedule is 10 cents under the gravity schedule posted for Gray County.

Big Semiwildcat

Roxana Petroleum Corp.'s No. 1 Ellis Cockrell, in the SE, Section 3, Block B-3, D. S. E., the southeast extension to the McIlroy Pool in Hutchinson County,

(Continued on Page 131)

WILDCAT OPERATIONS IN PANHANDLE

Week Ending September 2, 1927

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block—	Remarks—
Meadows et al's No. 1 E. D. Harrell, C Sec. 100, Blk. A-6, A. & G. Sur.	Drlg., 3,175 ft.
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Sur.	Spudded and temp. abd., 298 ft.

BAILEY COUNTY

Humble Oil & Refining Co.'s No. 1 W. H. Fuqua, cen. E. half Sec. 117, Blk. A, Melvin, Blum & Blum, Sur.	Rig.

BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW, Sec. 22, Blk. B-3, B. S. & F. Sur.	S.D., 1,620 ft.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Milling 8-in. cas., 2,110 ft.
Empire G. & F. Co.'s No. 1 Burnett Estate, Sec. 55, Blk. 5, I. & G. N. Sur.	Drlg., 1,815 ft.
Empire G. & F. Co.'s No. 2 Burnett Estate, Sec. 23, Blk. 5, I. & G. N. Sur.	Drlg., 1,800 ft.
Empire G. & F. Co.'s No. 3 Burnett Estate, Sec. 44, Blk. 5, I. & G. N. Sur.	Drlg., 1,715 ft.
Empire G. & F. Co.'s No. 7 Burnett Estate, Sec. 49, Blk. 5, I. & G. N. Sur.	Drlg., 2,050 ft.
Empire G. & F. Co.'s No. 9 Burnett Estate, Sec. 50, Blk. 5, I. & G. N. Sur.	Drlg., 2,000 ft.
Empire G. & F. Co.'s No. 10 Burnett Estate, Sec. 52, Blk. 5, I. & G. N. Sur.	Drlg., 1,860 ft.
W. A. Gamble's No. 1-A John Dies, 30 ft N of cen., Lot 7, Blk. 11, Panhandle Townsite, Sec. 69, Blk 2, T. T. R. R. Sur.	S.D., 1,340 ft.
Marston Oil Co.'s No. 1 J. L. Noel	F'ish., 3,064 ft.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y.	Set 6-in. 2,496 ft; fish., 2,712 ft.
Panhandle Northern Oil Co., Sec. 62, Blk. 2, T. T. R. R. Sur.	Cellar.
Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, I. & G. N. Sur.	U.R., 6-in. at 2,450 ft; D.T., 2,650 ft.
Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 200, Blk. 3	S.D., 720 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 78, Blk. M-17, B. S. & F. Sur.	Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur.	S.D., 510 ft. for casing.

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 600 ft N and W of SE cor. Sec. 676, W. & M. W. Sur.	Spudded and S.D.
Continental Oil Co.'s No. 1 B. P. Smith, C NE, Sec. 14, Blk. 9	Drlg. salt, 1,320 ft.
Hoover & Calloway's No. 1 O. L. Tucker, Sec. 736, Haggard Sur.	Spudded and S.D.
C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands	Set 6-in. pipe at 2,902 ft; S.D., 3,000 ft.

COLLINGSWORTH COUNTY

Harmon & Deems' No. 1 Wilson (Scott), Sec. 44, Blk. 21.	Loc.; temp. abd.

COTTLE COUNTY

Exploration Co.'s No. 1 Richards	Spudded and S.D.
Sun Oil Co.'s No. 1 Tom Burnett, C NW SE, Sec. 6, Blk. L, S. P. R. R. Sur.	D.&A., 3,510 ft.

DALLAM COUNTY

James et al's No. 1 fee, Sec. 9, 47½	Pull. 6-in. T.D., 2,865 ft.
Wood Bros. et al's No. 1 Capitol Synd., Sec. 19, Blk. 17.	6-in. 3,375 ft; S.D., 3,504 ft; S.L.M.
Marland Oil Co.'s No. 1 A. M. James, C SW W half, Sec. 21, S. H. McElreath Sur.	S.D., 500 ft. for water.
Marland Oil Co. et al's No. 1 Capitol Synd., Sec. 36 Blk. 18, Capitol Synd. land	Drlg. red rock, 1,982 ft.

DEAF SMITH COUNTY

Julien & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-3	S.D., 520 ft.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 93, Blk. K-4	S.D., 710 ft.

DONLEY COUNTY

A. T. Drlg. Co.'s No. 1 F. E. Harington, Sec. 39, Blk. 3-C	1,200 ft. water, 3,115-23 ft; show gas, 3,140-60 ft; dry granite wash, 3,260-93 ft; S.D., 3,498 ft. for water.

DICKENS COUNTY

Bowser Mickels et al's No. 1 Pitchford ranch, Sec. 1, Blk. 1, Sam Lazarus Sur.	S.D., 3,355 ft; cor. depth; T.A.

FLOYD COUNTY

Expltn. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur.	Spudded and S.D.
Expltn. Co.'s No. 1 Land & Cattle Co.	S.D., 246 ft. for casing.

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DUNN TOOLAGRAM

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Little River Pool Has Been Extended

Potential Production of Six Wells, 35,000 to 40,000 Bbls., Has Been Shut in to 17,000 Bbls. Earlsboro Shows Gain

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

With all eyes upon the Little River district of Seminole, and the actual work of proration accomplished in that territory, the first big result was that the discovery well of the Indian Territory Illuminating Oil Co. went dead 24 hours after it was subjected to a rigid proration.

Although the proration program entailed a sacrifice upon the part of the lease owners adjacent to production, it is thought that the net result will have a healthy effect upon the crude price structure which was becoming extremely wobbly during the early part of last week.

With six producing wells in the Little River Field, there is now a potential production of approximately 35,000 or 40,000 bbls. daily which is at this time restricted to 17,000 bbls.

The Little River Field has been extended one location to the south, a quarter mile and one location north of the west side, and the six wells which have penetrated the Wilcox sand have found good pay right in the top. The five wells other than the offset have been drilled just a short way into the sand. Four of them have punched 2 feet of sand, and the fifth, 7 feet. The average initial production in the top of the Wilcox in the field is 150 bbls. hourly which gives indications that the field may have the same possibilities as the Bowlegs part of Seminole.

Had no proration been placed in effect at Little River, there is little doubt about the field's having a potential production of 75,000 bbls. by the latter part of September, but with the output well in hand, just how much the field will be permitted to produce is a matter of conjecture at this time.

Earlsboro Increase

Of the remaining pools of the greater Seminole area, Earlsboro has showed an increase during the past 10 days. This field has been unusually erratic, and during the two weeks before this, it displayed a drop of over 50,000 bbls. It is possible that the Earlsboro Pool may attain another 200,000 bbls., which it made once before, but this is very unlikely. It has been averaging around 160,000 bbls. this week, an increase of 17,000 bbls. over its previous weeks output.

The Bowlegs Field has showed very little new development this week, and has been averaging around 160,000 bbls. daily. There are very few wells in this field which are not producing by the air lift.

The regular completions in the Seminole city pool have again showed a slight advance in that pool's production and it is above the 80,000-bbl. figure.

During the week, the average daily production of the Greater Seminole Field has been about 148,000 bbls.

The new wells in Little River include, Blackwell Oil & Gas Co.'s No. 1 Nitey, SE cor. SE, Section 35-8-6, which was making 1,900 bbls. and is now pinched in to a daily output of 145 bbls.; Indian Territory Illuminating Oil Co.'s No. 1 Dungan, SE cor. SW SE, Section 35-8-6, which is still making 1,900 bbls. and which will be pinched in this week; Indian Territory Illuminating Oil Co.'s No. 1 M. A. House, one location south of the discovery well, which made 1,991 bbls. the first 19 hours; Blackwell Oil & Gas Co.'s No. 2 Nitey, SW cor. SE SE, Section 35-8-6, which made 2,000 bbls. from the top of the Wilcox sand and Indian Territory Illuminating Oil Co.'s No. 1 Nitey, NE cor. NE, Section 2-7-6, a direct west offset to the discovery well, which is flowing 145 bbls. an hour from sand 4,148-4,151 feet.

Carter County

Schermerhorn Oil Co. and others have the rig up for No. 2 Lyles, NE cor. SE NW, Section 11-2s-3w. Max Westheimer's No. 2 Dixon, NW cor. SW, Section 18-1s-3w, has been abandoned at 3,029 feet. Magnolia Petroleum Corp.'s No. 1 Ratliff, NE cor. SW NW, Section 29-1s-3w, was completed for 172 bbls. in sands 2,945 feet to 3,211 feet, total depth 3,454 feet. Schermerhorn Oil Co. & Roxana Petroleum Corp.'s No. 2 Williams, SE cor. NE NW, Section 11-2s-3w, made 250 bbls. from a series of sands 3,285 feet to 3,709 feet. Magnolia Petroleum Corp.'s No. 9 Swartz, NE cor. NW NE, Section 26-2s-3w, is making 15 bbls. at the total depth of 3,008 feet, production coming from sand 2,765-2,892 feet.

Creek County

J. B. Grieves' No. 3, CWL SW SE, Section 12-19-8, is spudding. Gled Oil Co. has moved a machine out for No. 3 Knight, NE cor. NW, Section 24-19-8. Roach and others have the rig on the ground for No. 1 Strip, SW cor. NE, Section 35-18-9. A. E. Purser and others moved the machine out for No. 1 George, NE cor. SW SE, Section 23-18-11. Producers & Refiners Corp. made location for No. 1 Warren, NW cor. SE SE, Section 23-18-11. Dixie Drilling Co. has the rig on the ground for No. 3 Bowlegs, NE cor. SE SE, Section 1-17-9. Cumberland Petroleum Co.'s No. 3 Strip, NW cor. NE SE SE, Section 13-17-10, is rigging up to deepen. Thompson & Black moved a machine to the location for No. 4 Wilson, NW cor. SE SW, Section 16-17-11. Wolfe Oil Co.'s No. 1 Turnham, SW cor. SE NE, Section 6-16-9, is drilling deeper at 2,990 feet. Nowata Oil & Refining Co.'s No. 4 McNac, NE cor. NW NE SW, Section 16-16-9, is spudding.

Haddock and others' No. 1 Grayson, SW cor. SE, Section 10-18-9, is dry and abandoned in the Wilcox sand 3,123-28 feet. G. T. Roach and others' No. 2 Beaver, SW cor. NW SW NW, Section 35-18-9, made 35 bbls. from the Peru sand 1,923-47 feet. Kessler & Logan's No. 1 Kiefer, NW cor. SE NE, Section 36-18-10, topped the Wilcox sand at 2,721 feet and drilled in to 2,733 feet where it has been abandoned. A. E. Purser and others' No. 1 George, SW cor. NE SE, Section 23-18-11, was shut in for 10,000,000 feet of gas in the Dutcher sand 1,898-1,903 feet. Curtis Oil Co.'s No. 1 Painkiller, NW cor., Section 30-18-11, encountered the Wilcox sand at 2,662 feet, drilled in to 2,677 feet and was abandoned. Jackson & Wise's No. 1 Thomas, CSL SW NW, Section 13-17-10, had a show of oil in the Dutcher sand 2,470-98 feet, drilled to 2,520 feet and was abandoned. Pontiac Oil Co.'s No. 7 Fulsom, SW cor. SE SW SW, Section 13-17-10, has been abandoned at 2,498 feet. Ted Ray Oil Co.'s No. 5 Brink, SE cor. SW SE SW, Section 13-17-10, is a 300-bbl. well in the Dutcher sand 2,418-43 feet. J. H. Wright's No. 22 Tahkaney, CNL NW-NW, Section 24-17-10, found no sand and was abandoned at 2,496 feet. Thompson & Black's No. 2 Broadnox, SE cor. NW, Section 16-17-, was completed for 2,500,000 feet of gas in a stray sand 634-43 feet. Carpenter and others' No. 4 Jackson, CWL NE SW, Section 22-17-11, lost the hole at 2,134 feet and was abandoned.

Devonian Oil Co. & Independent Oil & Gas Co.'s No. 3 Bigpond, NW cor. SW, Section 36-15-7, made 80 bbls. after being shot with 80 quarts in sand 2,557-2,601 feet. No. 4 Bigpond, NE cor. SW NE, Section 36-15-7, was completed for 35 bbls. from sand 2,450-68 feet. H. C. Wilson's No. 1 Durant, NW cor. NE, Section 10-15-8, has been shut in for 37,000,000 feet of gas from sand 3,218-23 feet.

Garvin County

Day Oil Co.'s No. 1 Russell, CSL N-half NE, Section 22-1-1, is dry and abandoned at 3,040 feet.

Lincoln County

Shaffer Oil & Refining Co.'s No. 1 Cook, SE cor. SW, Section 31-17-5, was completed for 550 bbls. in sand 4,210-40 feet, being pinched in with over 900 pounds back pressure.

McLain County

Crown Oil Co. made location for No. 1 McCullough, SW cor. NW, Section 26-5-3.

Pawnee County

Victor Oil Co.'s No. 1 Colbaugh, CWL NW SW, Section 22-22-7, is dry and abandoned at 2,700 feet. George Baker's No. 1 Easly, SE cor. SW SW, Section 3-20-6, has been shut in for 5,000,000 feet of gas in sand 3,052-96 feet. Magnolia Petroleum Corp.'s No. 2 Vickers, NW cor. SW NE, Section 15-20-6, drilled to 3,370 feet, plugged back to sand 3,083-3,127 feet and completed for 17 bbls.

Payne County

Shaffer Oil & Refining Co.'s No. 1 S. Harris, NE cor. SE SW NE, Section 9-18-5, made 17,000,000 feet of gas from sand 2,866-85 feet.

Pontotoc County

Homaokla Oil Co. has the rig up for No. 2 Milner, SW cor. NW SW NW, Section 16-5-8. Shaffer Oil & Refining Co. has a machine in the ground for No. 3 Yoakum, SW cor. NW NW, Section 16-5-8. W. R. Ramsey has built the rig for No. 1 Parker, SW cor. NW SE, Section 17-5-8. Louisiana Oil Refining Corp. is rigging up rotary tools for No. 2 McElroy, SW cor. SE, Section 17-5-8. Homaokla Oil Co. has built the rig for No. 3 Milner, SE cor. NE NE, Section 17-5-8. Winkler & McQueen's No. 1 Rose, NE cor. SE NE, Section 17-5-8, is rigging up rotary tools. Louisiana Oil Refining Corp. has built the rig for No. 3 Warfle, NW cor. NE, Section 20-5-8. Whitney and others made location for No. 1 Shields, NW cor. SE, Section 20-5-8. W. R. Ramsey's No. 2 Webb is rigging up rotary tools in the NW cor. NE SW, Section 20-5-8. No. 3 Webb, NE cor. NW SW, Section 20-5-8, is also rigging up. American Oil & Refining Co. and others moved a machine out for No. 1 Wright, NW cor. NE NE, Section 13-4-6.

Shaffer Oil & Refining Co.'s No. 1 Yoakum, SW cor. NW NW, Section 16-5-8, has been completed for 300 bbls. in broken sands 2,434-42 and 2,442-48 feet. No. 2 Yoakum, SW cor. NW NW, Section 16-5-8, has been abandoned at 1,140 feet. Homaokla Oil Co.'s No. 2 Harjo, SW cor. SE SE, Section 17-5-8, came in for 90 bbls. from sands 2,460 to 2,497 feet.

Tulsa County

Holmes and others have the rig up for

FLUSH PRODUCTION DURING AUGUST SHOWED LOSS AS COMPARED TO JULY

Flush production from wells completed in fields east of California during August totaled 59,548 bbls. less than the initial output of completions in July. During August there were 252 less wells completed than during July and new work also showed a falling off, there being 415 less operations in all fields east of California.

SUMMARY OF ALL FIELDS

Field—	Comp.	Prod.	Dry	Gas
Eastern	437	2,274	32	61
Central Ohio	53	352	10	31
Lima	22	313	3	3
Indiana	20	653	12	1
Illinois	19	390	10	0
Michigan	23	375	1	0
Kentucky	140	4,434	49	1
Tennessee	15	46	11	1
Oklahoma	225	231,253	113	25
Kansas	55	3,135	32	4
Texas Panhandle	47	6,665	13	10
North Texas	236	18,732	118	12
West Texas	71	59,936	18	0
Southwest Texas	56	539	21	10
East Texas	8	.....	8	0
Louisiana	59	6,758	27	13
Arkansas	31	1,825	12	14
Wyoming	35	5,071	7	6
Montana	74	5,516	18	12
Colorado	12	520	5	2
New Mexico	8	50	6	1
Gulf Coast	50	23,135	18	0
Utah	2	0	2	0
Total August	1,798	371,972	546	207
Total July	2,050	431,520	657	188
Difference	252	59,548	111	19

SUMMARY OF NEW WORK

Field—	Rigs	Drlg.	Total
Eastern	89	431	520
Central Ohio	18	57	75
Lima	1	27	28
Indiana	3	54	57
Illinois	5	29	34
Michigan	7	52	59
Kentucky	2	111	113
Tennessee	0	23	23
Mississippi	11	19	30
Alabama	0	7	7
Florida	2	12	14
North Carolina	0	1	1
Oklahoma	183	972	1,155
Kansas	52	194	246
Texas Panhandle	98	125	223
West Texas	72	246	318
North Texas	102	369	471
Southwest Texas	23	119	142
East Texas	1	13	14
Louisiana	42	103	145
Arkansas	14	37	51
Wyoming	22	119	141
Montana	4	123	127
Colorado	5	76	81
Utah	2	25	27
New Mexico	5	92	97
Gulf Coast	7	127	134
Total August	770	3,563	4,333
Total July	685	4,063	4,748
Difference	85	500	415

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	11	1,638	2	1
Creek	44	4,595	18	4
Grady	15	777	3	5
Kay	4	148	2	..
Muskogee and Wagoner	12	10	10	1
Okfuskee	5	1,995	2	2
Okmulgee	9	65	4	2
Osage	13	2,385	1	1
Pawnee	6	23	31	..
Payne	5	3,442	2	..
Pontotoc and Garvin	12	1,936	5	..
Pottawatomie	31	78,675	2	2
Stephens and Cotton	14	4,212	4	1
Seminole	126	131,219	43	3
Tulsa	6	40	4	..
Miscellaneous	12	93	7	2
Total August	325	231,253	113	25
Total July	423	289,333	136	50
Difference	98	58,080	23	25

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Carter	7	26	33
Creek	20	69	89
Grady	7	48	55
Grant	1	8	9
Hughes	3	7	10
Kay	4	29	33
Lincoln	..	13	13
Muskogee & Wagoner	10	15	26
Okfuskee	16	25	41
Okmulgee	9	27	36
Osage	8	36	44
Pawnee	2	10	12
Payne	1	7	8
Pontotoc & Garvin	6	27	33
Pottawatomie	9	90	99
Seminole	74	468	542
Stephens & Cotton	3	24	27
Miscellaneous	3	43	46
Total August	183	972	1,155
Total July	176	1,066	1,242
Difference	7	94	87

(Continued on Page 116)

The Government tacitly permits the steel industry to hold its production within current demands

The Government actually aids the cotton growers to do the same thing

It should allow the oil industry the same privilege, otherwise depressions will occur periodically which will seriously injure the Nation's resources and its safety

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

No. 1 Ragen, NW cor. NE SE, Section 24-19-10. Sheridan Oil Co. has built the rig for No. 3 E. Russell, SE cor. NE NE, Section 27-19-11.

Okfuskee County

Josey Oil Co.'s No. 1 Carolina, NE cor. SE, Section 32-12-11, is drilling at 3,100 feet. Riverland Oil Co.'s No. 2 Barnett, SE cor. SW SW, Section 19-11-11, is making 1,720 bbls. from the Wilcox sand 3,643-52 feet.

Okmulgee County

F. D. Misner's No. 2 Carter, CWL SW NE, Section 10-15-14, is drilling at 600 feet. J. L. Selby has moved out a machine for No. 8 Stevens, CSL N half SW, Section 10-14-14. A. G. Hazlett has the machine on the ground for No. 4 B. Jones, CWL NW NW, Section 33-13-13.

Anadarko Western Oil Co.'s No. 1 Phinney, NW cor. SE SW, Section 30-15-12, is dry and abandoned at 2,878 feet. Carr Peterson's No. 2 E. Ware, C SE SW, Section 9-15-14, was shut in for 6,000,000 feet of gas at 1,886 feet. F. D. Misener's No. 1 Carter, SW cor. NE, Section 10-15-14, is making 10 bbls. from sand 981-992 feet. No. 2 B. Carter's No. 1, NW cor. SE, Section 10-15-14, is a 30-bbl. well in sand 981-994 feet. M. A. Wilder and others' No. 1 Adams, SW cor. NW NE, Section 17-14-12, is a dry hole at 2,903 feet. E. J. Lambert's No. 2 McCombs, SW cor. NW SW NE, Section 30-13-15, has been shut in for 200,000 feet of gas in sand 780-85 feet. Eagle Picher Lead Co.'s No. 1 Diamond, NE cor. NW SW, Section 6-12-12, is a dry hole at 2,599 feet.

Osage County

Oklahoma Natural Gas Co.'s No. 774, SE cor. NW SE, Section 33-22-11, is spudding. Peters Petroleum Co. has the rig on the ground for No. 1 SW cor., Section 23-25-9. Sand Springs Home's No. 105, CNL N half SE, Section 10-21-9, is dry and abandoned in the Bartlesville sand 2,176-2,236 feet. M. M. Lefever's No. 13, SW cor. NE NW, Section 1-28-10, was completed for 5 bbls. in the Peru sand 1,120-47 feet. Indian Territory Illuminating Oil Co.'s No. 369, NE cor., Section 17-27-11, has been shut in for 2,250,000 feet of gas in sand 1,920-26 feet. Wiser Oil Co.'s No. 75, NE cor., Section 21-27-12, has been abandoned at 698 feet. No. 74, NE cor. SE SW SW, Section 15-27-12, has been abandoned at 694 feet. Phillips Petroleum Co.'s No. 1, NE cor. SE, Section 29-26-6, is dry and abandoned at 2,990 feet. McCuen & Wormser's No. 7, NE cor. SE NW, Section 15-24-8, is making 5 bbls. from sand 489-510 feet. Winona Oil Co.'s No. 1, NW cor., Section 17-21-11, is dry and abandoned at 965 feet in the Cleveland sand. Oklahoma Natural Gas Corp.'s location, SW cor. NE NE, Section 14-21-10, has been abandoned.

Beckham County

Pferffel and others' No. 1-A Abbott, NE cor., Section 35-9-22w, has been abandoned at 300 feet.

Caddo County

English Drilling Co.'s No. 6 Abernathy, C NE SE, Section 31-6-9w, was completed for 50 bbls. at total depth of 2,340 feet.

Garfield County

Sinclair Oil & Gas Co.'s No. 75 Walker (North), NE cor. SW NE, Section 13-22-4w, is drilling at 515 feet. The rig is being built for No. 12 Frickenschmidt, NE cor. SW NE SW, Section 25-22-4w. Charles E. Knox's No. 6 Crooks, CEL SW NE, Section 26-22-4w, is drilling at 800 feet. The rig is up for No. 1 Wells, NE cor. SW, Section 26-22-4w. Sinclair Oil & Gas Co.'s No. 3 Bangerter, NE cor. NW NW SE, Section 26-22-4w, is drilling at 1,610 feet. No. 4 Bangerter, NE cor. NW SE, Section 26-22-4w, is spudding at 100 feet. The rig is up for No. 5 Bangerter, NW cor. SE, Section 26-22-4w. Chas. E. Knox's No. 4 Crooks, CSL SW NE, Section 26-22-4w, was completed for 85 bbls. in sand 1,750-60 feet.

Grady County

Hamon & Cox's No. 2 Smith, SW cor. NW NW, Section 16-3-5w, is being deepened from 1,841 feet and now drilling at 1,921 feet. Carter Oil Co.'s No. 1 Ray Horton, SW cor. SE NW, Section 8-3-5w, Carter-Knox Pool, an old well, is drilling deeper at 2,111 feet.

Magnolia Petroleum Corp.'s No. 1 Miller, SW cor. NE SW, Section 22-3-5w, has been abandoned at 3,540 feet. No. 1 Rockhold "C", C SW NW, Section 11-4-8w, has been completed for 25,000,000 feet of gas at 1,765 feet. Watchorn Oil & Gas Co.'s No. 1 Huling, NW cor., Section 13-4-8w, was shut in for 40,000,000 feet of gas in sand 2,226-2,307 feet. The Prairie Oil & Gas Co.'s No. 5 Russell, SE cor. NE NW, Section 21-3-5w, made 105 bbls. at 1,754 feet.

Hughes County

Dixie Oil Co.'s No. 3 Cornelius, SE cor. SW SW, Section 17-8-10, is a location.

Kay County

Larutan Gas & Fuel Co.'s No. 1 Woods, NE cor. NW NW, Section 30-27-1w, is making 500,000 feet of gas from sand 737-43 feet.

Logan County

Sinclair Oil & Gas Co. is building rig for No. 1 Weber, SE cor., Section 18-19-4w. Twin State Oil Co. made location for No. 1 Shaffer, NW cor., Section 20-19-4w. Sinclair Oil & Gas Co. is moving in the rig for No. 1 Knecht, SW cor. NE, Section 28-18-4w.

Mayes County

J. L. Dixon's No. 1 Drew, SE cor. NE NE NW, Section 8-20-19, was completed as a dry hole at 2,395 feet.

Washington County

Grady & Hart's No. 1, NE cor. NW NW, Section 22-24-13, has been plugged at 1,423 feet.

Pottawatomie County

Magnolia Petroleum Corp. made location for No. 1 Vieux, SW cor. SE, Section 13-7-4, Pearson area. Location was also made for No. 1 Davis, NW cor. NE, Section 24-7-4.

Magnolia Petroleum Co.'s No. 3 Cowden, NE cor. SW, Section 4-9-5, Earlsboro Pool, has been abandoned at 3,335 feet. Pure Oil Co.'s No. 2 Day, NW cor. SW, Section 16-9-5, Earlsboro Pool, has been abandoned at 4,535 feet. Carter Oil Co.'s No. 1 E. Davis, SW cor. SE SE, Section 19-7-4, has been completed for 28 bbls. oil and 11,000,000 feet of gas. Roxana Petroleum Corp.'s No. 1 Coleman, NE cor. NW, Section 33-7-5, has been abandoned at 4,315 feet.

Sequoyah County

H. H. Orr and others' No. 1 Fox, NW cor., Section 15-10-26, has been completed for 962,880 feet of gas.

Seminole County

Amerada Petroleum Corp. is building the rig for No. 3 Rogers, NW cor. SE SE, Section 3-9-5. Carter Oil Co.'s No. 4 Paine, SW cor. NW SE, Section 12-9-5, is drilling at 2,400 feet. Devonian Oil Co.'s No. 1 Smith, SW cor. NW NE, Section 12-8-6, Bowlegs Pool, is a cellar. Carter Oil Co. is erecting the rig for No. 5 Fish, NW cor. SW, Section 36-8-6. The rig is also being built for No. 6 Fish SW cor. NW, Section 36-8-6. Amerada Petroleum Corp.'s No. 5 Rascoe, NE cor. SW NW, Section 15-8-6, has been deepened to 4,107 feet and is producing 2,000 bbls. The Texas Company's No. 2 Coker, NE cor. SW, Section 1-7-6, is rigging up. Snowden & McSweeney has the rig built for No. 1 Tiger, NW cor., Section 13-7-6. Independent Oil & Gas Co.'s No. 1 Hotulke, SW cor. NW NW, Section 23-7-6, is rigging up rotary tools. The Prairie Oil & Gas Co. is building the rig for No. 2 Aldridge "A", SE cor. SE SE, Section 34-8-6.

McCulloch Oil Co.'s No. 1 Jarvis, NW cor., Section 14-10-5, is dry and abandoned at 4,901 feet. Sinclair Oil & Gas Co.'s No. 5 Yarbrough, NW cor. NE, Section 4-10-8, is dry and abandoned at 3,460 feet. Wigdon Long and others' No. 1 Brown, CNL NE NE, Section 20-10-9, has been shut in for 40,000,000 feet of gas in sand 3,220-42 feet. Gypsy Oil Co.'s No. 2 Bruner, SW cor. NW NE, Section 10-9-5, was completed for 2,785 bbls. in the Wilcox sand 4,298-4,313 feet. Barnsdall Oil Co.'s No. 2 H. Sullivan, CSL SE, Section 11-9-5, had an initial production of 2,007 bbls. in the Wilcox sand 4,477-84 feet. Magnolia Petroleum Corp.'s No. 1 Sparks, NW cor. SW, Section 11-9-5, was completed for 1,830 bbls. in the Wilcox sand 4,285-88 feet. No. 6 Sparks, SE cor. NW SW, Section 11-9-5, made 2,336 bbls. from the Wilcox sand 4,274-95 feet. No. 1 Dixon, SW cor. SE SW, Section 12-9-5, is dry and abandoned at 4,416 feet.

Magnolia Petroleum Co.'s No. 2 Dixon, SE cor. SW, Section 12-9-5, is a dry hole at 4,322 feet in the Wilcox sand. No. 4 Seay, SW cor., Section 12-9-5, had an initial production of 1,479 bbls. from the Wilcox sand 4,295-4,315 feet. Gypsy Oil Co.'s No. 2 D. Smith, NE cor. NW NE, Section 15-9-5, is a dry hole at 4,414 feet. Wilcox Oil & Gas Co.'s No. 3 Cluck, NW cor. NE, Section 4-9-6, Searight Pool, was completed for 528 bbls. in the Wilcox sand 4,354 feet. No. 5 Cluck, NE cor. NW, Section 4-9-6, made 1,440 bbls. from the Wilcox sand 4,390-4,413 feet. Indian Territory Illuminating Oil Co.'s No. 1 Marcy, NW cor., Section 13-9-6, Seminole Pool, is dry and abandoned at 4,494 feet. Sinclair Oil & Gas Co.'s No. 2 Dicey, NE cor., Section 22-9-6, had the Wilcox sand 4,180-4,222 feet and an initial production of 385 bbls. Gypsy Oil Co.'s No. 4 Cudjo, NW cor. SW NE, Section 34-9-6, swabbed 25 bbls. from the Wilcox sand 4,442-4,598 feet. T. B. Slick's No. 3 Giblet, NE cor. SE, Section 35-9-6, was completed for 1,800 bbls. in Wilcox sand 4,052-88 feet. No. 4 Giblet, NW cor. SE SE, Section 35-9-6, is dry at 4,555 feet. Pure Oil Co.'s No. 6 Strothers "B", SE cor. SW NW, Section 36-9-6, made 717 bbls. from the Wilcox sand, 4,127-44 feet. Sinclair Oil & Gas Co.'s No. 1 S. Warrior, SE cor. SW NW, Section 17-9-7, drilled to 4,355 feet and plugged back to 3,487 feet and completed for 237 bbls. Gypsy Oil Co.'s No. 1 Stepney, SE cor. NW SE, Section 23-9-7, is dry and abandoned at 3,725 feet. No. 1 Johnson, SE cor. SW NW, Section 28-9-7, is a dry hole at 2,750 feet. Pure Oil Co.'s No. 1 Markwell, NW cor. NE NE, Section 28-9-7, is dry and abandoned at 3,540 feet. Atlantic Oil Producing Co.'s No. 2 Baker, NE cor. SE SE, Section 10-8-6, Bowlegs Pool, made 1,000 bbls. from the Wilcox sand 4,146-68 feet. Gypsy Oil Co.'s No. 2 Cumsey, SW cor. NE SE, Section 10-8-6, was completed for 487 bbls. in the Wilcox sand 4,174-4,295 feet. Pure Oil Co.'s No. 1 Strothers "F", SE cor. NW, Section 10-8-6, had an initial production of 630 bbls. from the Wilcox sand 4,405-29 feet. Gypsy Oil Co.'s No. 1 Grayson, SW cor. NW NW, Section 13-8-6, was completed for 2,245 bbls. in the Wilcox sand 4,198-4,215 feet. Empire Gas & Fuel Co.'s No. 7 Lacey, SW cor. NW SW, Section 14-8-6, had an initial production of 90 bbls. from the Wilcox sand 4,294-4,404 feet. Pure Oil Co.'s No. 18 Reed, NE cor. SE NW, Section 14-8-6, has been abandoned at 4,370 feet. Gypsy Oil Co.'s No. 1 Bowlegs, NE cor. NW SE, Section 22-8-6, is dry and abandoned at 4,387 feet. Indian Territory Illuminating Oil Co.'s No. 10 Bowlegs, SW cor. NW NE, Section 22-8-6, swabbed 237 bbls. from the Wilcox sand 4,230-45 feet. McCulloch Oil Co.'s No. 2 Bowlegs, NW cor., Section 22-8-6, was completed for 35 bbls. at total depth of 4,440 feet but production coming from Misener sand. Mid-Continent Petroleum Corp.'s No. 1 Brown, NE cor. SE NW, Section 28-7-6, is dry and abandoned at 4,495 feet.

Seminole Production

Production of the Greater Seminole area for September 2 was as follows:

Little River

Company and Farm—	Wells	Prod.
Blackwell—Nitey	2	5,719
Ind. Terr.—Dungan	1	4,266
House, H. E.	1	2,835
Nitey	1	4,837
Total	5	17,657

Bowlegs

Company and Farm—	Wells	Prod.
Amerada—Rasco	8	8,470
Atlantic—Baker	4	2,295
Fleet	4	1,871
Grayson	1	2,430
Jones, C.	1	146
Atlantic and Denver—Jones, A.	4	2,477
Barnsdall—McNac	1	60
Murrow	4	2,404
Carter—Bowlegs	3	2,755
Harjoche	6	2,835
Hilly	1	1,910
McGeisey	1	.....
Walker	2	1,140
Wise	9	9,210
Empire—Lacy	6	2,029
Wise	1	2,407
Gypsy—Bowlegs	1	830
Brown	1	93
Cumsey	2	568
Grayson	1	1,958
Walker	8	3,680
Wise	2	83
Indep.-Marland—Coker	1	510
Ind.-Terr.—Barnett	2	1,571
Billington	2	1,141

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GREENWOOD WELL MAKES 250 BBLS.; OXFORD TOWNSITE TO SUPREME COURT

by J. L. Dwyer
Staff Correspondent, Kansas Fields

The Kansas fields were unusually quiet during the past week. In Greenwood County, William McDougal and others' No. 2 Hood, SW cor. NE, Section 14-22-11, made 250 bbls. from the Bartlesville sand, 1,855-95 feet after a shot of 90 quarts.

The battle of the townsite of Oxford, will be carried into the Kansas Supreme Court by the operators who have cited the city authorities to show cause why the drilling and producing operations should not be carried on.

Barber County

Schaffer and others made location for No. 1 Carter, C SE SE, Section 2-33-13w.

Barton County

Haynes and others' No. 1 Taul, NW cor., Section 31-18-12w, is dry and abandoned at 3,510 feet.

Cowley County

Shawver and others made location for No. 1 Shurtz, C NW SE, Section 19-34-3. Morton & Boggs' No. 1 Eastman, NE cor. SE SW, Section 5-31-6, is dry and abandoned at 2,930 feet. McNabb and others' No. 1 Madison, Lot 7, Block 44, Section 22-32-4, was completed for 2,500,000 feet of gas.

Elk County

Byington and others' No. 1 Elk Falls Bank, CSL SE SW, Section 15-31-11, is drilling at 230 feet. Wilcox Oil & Gas Co.'s No. 1 Barnes, SW cor. NW, Section 15-31-9, is a gas well making 250,000 feet of gas from sand 1,447-48 feet. Leighty and others' No. 1 Webb, SE cor., Section 15-31-10, was completed for 15 bbls. in sand 1,633-45 feet.

Greenwood County

Phillips Petroleum Co. made location for No. 1 Harris, C N half NE SW, Section 19-22-11. Phillips Petroleum Co. also made location for No. 1 Beam, SW cor. NE, Section 35-23-8. Cross and others' No. 2 Hoover, CEL SE, Section 36-24-12, is rigging up. Bisagno and others made location for No. 1 Rigsin, SE cor. SW, Section 10-25-13. Mendenhall and others' No. 1 Hoggart, SW cor. SE NE, Section 16-25-13, is rigging up. Kiskadden and others made location for No. 1 Wilkerson, NE cor. SE SW, Section 6-26-9. Higgins and others made location for No. 1 Cummings, NW cor. NE NW, Section 2-26-10. Polhamus and others are building the rig for No. 1 Forbes, NW cor. NE NW, Section 2-26-10. Rogers and others have the rig up for No. 1 Hover, NE cor. NW NE NW, Section 2-26-10. Wahn and others have the rig up for No. 1 Wesiphal, NE cor. NW NW, Section 2-26-10.

Empire Gas & Fuel Co.'s No. 12 Hind, C SE SW, Section 11-22-11, was completed for 3 bbls. in sand 1,866-1,905 feet. No. 18 Kipfer, C SW SE, Section 11-22-11, made 3 bbls. from sand 1,845-89 feet. No. 14 Duby, SE cor. SW SW, Section 14-22-11, made 5 bbls. from sand 1,872-1,907 feet. No. 17 Fromme, C NW NE, Section 14-22-11, was completed for 3 bbls. in sand 1,847-90 feet. No. 9 Killison, C NW NW, Section 14-22-11, produced 3 bbls. from sand 1,870-1,924 feet. McGinnis and others' No. 1 Rush, NE cor. NW, Section 9-27-11, is dry at 1,943 feet. The Prairie Oil & Gas Co.'s No. 1 Beuchat, NW cor. SE SE, Section 5-24-12, made 30 bbls. from sand 1,820-44 feet.

Lyon County

Loy and others' No. 1 Schroeder, NE

(Continued on Page 117)

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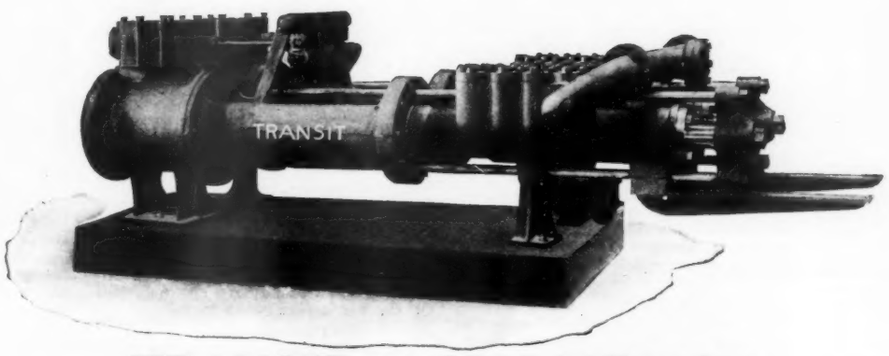
Dirty Work



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Humble Field Well Makes 3,000 Bbls.

Continued Good Production in Navarro's Producer in Pierce Junction's Deepest Well. Production Up

By Staff Correspondent

HOUSTON, Tex., Sept. 5.—A 3,000-bbl. initial producer in the Humble Field by The Texas Company and the continued good production of the Navarro Oil Co.'s No. 2 Cain in the deep sand extension of the Pierce Junction Field at a total depth of 4,880 (the deepest producing well in Pierce Junction district) were the features of the week in the Gulf Coastal area. The Navarro Oil Co.'s well is producing through a half-inch choker and had been averaging 2,500 bbls. a day of 32 gravity oil since it came in.

The Gulf Production Co. will offset the Navarro Oil Co.'s No. 2 Cain. Old wells in the neighborhood are not in a condition that would make deeper drilling practical and it will take about 90 days of drilling from the top of the ground to determine the real importance of the good well on the Cain.

The Texas Company's No. 20 House in the Humble Field is producing at a total depth of 3,704 feet. The 3,000-bbl. initial production is unusually large for the neighborhood. Other big wells thereabouts have not shown very good staying qualities, it is said.

Production Increases

The production of the Gulf Coastal fields showed a net increase of 4,200 bbls. over last week. Spindletop increased from 54,200 bbls. as an average for the previous week to 59,600 bbls. as a result of last week's completions. On Thursday Spindletop had a production of 59,600 bbls. of which the Yount-Lee Oil Co. was credited with 43,000 bbls., Sun Oil Co. 8,500 bbls. and the Gulf Production Co. 4,400 bbls., these being the largest producers there. The statistician of one of the large companies gives the production of the Spindletop deep sands as 29,417,-540 bbls. from July, 1926, when the deep sand was discovered to September 1 of this year.

GULF COAST PRODUCTION

Average Daily Estimated Output for Week Ending September 3.

Field—	Bbls.
Batson	1,325
Big Creek	2,800
Boling	2,175
Blue Ridge	2,775
Barber Hill	900
Damon Mound	875
Goose Creek	8,025
Hull	13,950
Humble	4,200
High Island	100
Kingsville	390
Markham	250
Moore's Field	15
Nash Dome	1,125
Pierce Junction	7,250
South Liberty	2,450
South Dayton	375
North Dayton	245
Sour Lake	4,175
Spindletop	59,600
Saratoga	1,150
West Columbia	8,375
Orange	4,950
Edgerly, La.	1,575
Jennings, La.	1,000
Lockport, La.	5,300
Vinton, La.	4,975
Stark, La.	500
Miscellaneous Louisiana	150
Total	140,975
Total last week	136,775
Difference	4,200
Southwest Texas	
Luling	16,450
Mirando	9,700
Somerset	2,475
Callahan	30
Rockdale-Minerva	980
Lockhart (Lytton Springs)	1,810
Total	31,445
Total last week	32,075
Difference	630
Grand total for week	172,420
Grand total for last week	168,850
Net increase	3,570

Seismographs Still Active

The hunt for salt domes continues in southeastern and southern Texas. The Roxana Petroleum Corp. is "shooting" southern Houston County and in scattered parts of Nacogdoches County, and seismograph crews of the Humble Oil & Refining Co. are shooting in Orange County east of the river in the Port Neches area. A Humble crew is still working in the Sargeant area in Matagorda County, but is about completed. All the data on these geophysical findings are kept very strictly secret, and about all the information obtained by the scouting forces which keep their eye on the scientists is notations as to where they are working. Amusing stories are related of the efforts of the scouts to keep tab on the geophysical parties and of the efforts of the latter to throw the scouts off the scent. The tales involve Machiavellian intrigue in which garage men, hotel porters and night clerks are prominent figures; wildgoose chases, the blocking of roads by rear guards of the seismograph crews to delay the progress of the scouts, and the like. The men have made a lively game of hide and seek of it with no other result than to break up the monotony of their work, and it is hard to say which side has won.

Leasing activities and geophysical tests in the Gulf Coastal regions in Louisiana indicate that operators in this region are yet hopeful of opening new producing areas in that old territory. In Cameron Parish, the Roxana Petroleum Corp. has been given an exploration lease by the Gulf Land Co., which covers over 50,000 acres in Townships 12s-11w, 12s-12w, and 12s-14w, at 25 cents per acre. The purchasing company has the privilege of selection after geological and geophysical surveys have been made.

The Gulf Refining Co. has a seismograph crew surveying United Lands Co. acreage in the McElroy area in Ascension Parish. A Roxana crew is surveying, or "shooting" as seismograph work is better known, in Beauregard Parish between Dequincey and Merryville, and another Roxana outfit is shooting in Township 4s-7e, south of Mellville in St. Landry Parish.

Flowing 1,500 Bbls.

The Gulf Production Co.'s No. 43 Bright Penn, in the Edgerly Pool, Calcasieu Parish, Louisiana, is flowing 1,500 bbls. at 3,400 feet. The same company's No. 42 Bright Penn is at 3,700 feet and will be put on the pump. McDaniel & Ellis' No. 1 Ecker has salt water at 3,800 feet.

The Rex Petroleum Co.'s No. 7 Hunter is drilling at 3,550 feet. Wilson Broach's No. 4 Wilson is drilling below 3,425 feet, and derrick is up for No. 5.

Lockport Pool

The Vacuum Oil Co. and Gulf Production Co.'s No. 8 Miller, in the Lockport Pool, has a fishing job at 4,425 feet. No. 12 Miller was at 3,725 feet and strainer was being set. No. 17 Miller was drilling at 3,525 feet and No. 18 Miller was at 3,775 feet with casing set. The same companies' No. 2 Farquahar and others was drilling at 4,450 feet and No. 5 Farquahar and others drilling at 5,530 feet, and their No. 2 Freiberg & Wolf was drilling at 3,725 feet, and No. 5 Bordages at 2,400 feet, and No. 1 fee at 1,775 feet.

Blue Ridge

In the Blue Ridge Pool, the Navarro Oil Co.'s No. 3 Robinson-A was abandoned at 3,675 feet where it drilled into salt water. No. 2 Robinson-B is a dry gas well at 3,650 feet. Derrick is up for No. 3 Robinson-B. J. S. Abercrombie & Co.'s No. 3 Robinson set casing at 3,700 feet, and the crew set strainer at 3,800 feet, and were bailing in No. 3 West Schenck of the same firm. The Cunningham Production Co.'s No. 1 Blakely was drilling below 2,700 feet. The Gulf Production Co.'s No. 11 West Schenck was pumping 100 bbls. at 3,900 feet. The well was showing 4 per cent b.s. and water. The same company's No. 10 Bassett Blakely-B set strainer at 2,850 feet. No. 15 Bassett Blakely-C, now at 3,050 feet will be deepened.

Hull Pool

The Republic Production Co. has a 1,000-bbl. well in No. 26 Dolbear in the Hull Pool at 2,650 feet. No. 54 Dolbear was drilling at 1,450 feet. No. 45 will be deepened. The Texas Company will deepen No. 47 Merchant. Its No. 5 Hannah-Vacuum was drilling at 2,000 feet and location has been made for No. 7 Hannah-Vacuum. The Empire Gas & Fuel Co.'s No. 26 Barngrover will be put on the pump, total depth 3,130 feet. The [illegible] Interests' No. 3 Palmer is shut down in salt at 1,550 feet.

The Gulf Production Co.'s No. 21 J. C. Baldwin fee is pumping 70 bbls., 7 per cent water, at 2,950 feet. Same company's No. 29 Phoenix Development Co. is drilling at 3,050 feet. No. 61 Phoenix Development Co. will be deepened. Present depth 3,450 feet.

Orange Pool

The Tillery Oil Co.'s No. 3 State in the Orange Pool is flowing 525 bbls. of oil at 3,400 feet. The Rycade Oil Corp. was fishing at 4,650 feet in No. 11 State-B. The Texhoma Oil Co.'s No. 16 Chesson was shut down at 3,350 feet and the company has a fishing job at 3,040 feet in No. 6 Chesson. Brownie Babbittee Oil Co.'s No. 1 Peveto will be deepened. The Sinclair Oil & Gas Co. has a fishing job at 3,300 feet in No. 4 Granger. The Gulf Production Co. will deepen No. 15 Lee Hager fee. The Sun Oil Co. will deepen No. 1 Belile.

Pierce Junction

The Moody Corp. abandoned its No. 1 Hume in the Pierce Junction area in Harris County in a hard sand at 5,163 feet. It was the only completion in the field in the course of the week. The Rio Bravo Oil Co.'s No. 8 Settegast fee was drilling at 4,300 feet. A showing of oil was reported at 4,270 feet. No. 3-B Settegast was drilling at 3,745 feet, and No. 6-B at 2,700 feet. The Marland Oil Co.'s No. 4 Prudential Investment Co. shut down at 4,650 feet. Location has been made for No. 5. Anderson & Plummer's No. 1 Whitehead was sidetracking at 3,900 feet. The Navarro Oil Co. will deepen No. 3 Cain. Casing was set at 4,150 feet in the Leonard Petroleum Co.'s No. 1 Gilmore. The Gulf Production Co.'s No. 3 W. H. Jones fee was drilling at 4,250 feet and location has been made for No. 21 E. R. Taylor and others.

The Orange Petroleum Co.'s No. 3 Merchant in the Sour Lake Pool will be put on the pump, total depth 4,400 feet. Location has been made for No. 4 Merchant.

In the Batson Pool, Hardin County, the Deutser Oil Co. shut down at 1,050 feet in No. 2 Colorado & Batson syndicate. The Texas Company was drilling at 3,748 feet in No. 1 Sterling. Christian & Dutton drilled into salt water at 2,520 feet in No. 1 Kirby and shut down. Charles Hooks' No. 1 Lejarza was drilling at 1,375 feet in gumbo and boulders. Capital Oil Co. was drilling at 2,615 feet in No. 8 Hodges. The East Batson Oil Co.'s No. 3 Bates was pumping 10 bbls. a day at 500 feet. No. 4 Bates was drilling at 450 feet. The Paraffin Oil Co. had salt water at 810 feet in No. 70 Paraffin and will deepen.

Spindletop Operations

A small well in a deep sand and a deep failure were all Spindletop had to offer in the past week. The Magnolia Petroleum Co.'s No. 3 fee was pumping 90 bbls. a day at 5,225 feet, showing 10 per cent salt water. No. 5 fee was drilling at 4,425 feet, No. 3 fee-A drilling at 4,700 feet, and No. 6 fee-A fishing at 5,200 feet. The Sun Oil Co. abandoned No. 1 Price at 5,290 feet. The same company has made a location for No. 4 Price; has a derrick up for No. 11 McLean; drilling at 5,475 feet in No. 6 McLean; drilling at 6,310 feet in No. 12 McLean; at 5,225 feet in No. 14 McLean, and is preparing to deepen No. 7 McLean.

The Hines Oil Co. was drilling at 5,060 feet in No. 1 Weed. The Rio Bravo Oil Co. was below 3,190 feet in No. 65 T. & N. O. and was fishing at 3,900 feet in No. 3 T. & N. O. George White, trustee, shut down at 4,460 feet on No. 3 Bush. The Plummer Oil Co. has derrick up for No. 1 Quinn. J. O. Davis was drilling at 4,240 feet in No. 2 Gladys. The Gulf Production Co. set strainer at 4,125 feet in No. 8 Jeanette Mann and was washing. The same company was drilling at 5,330 feet in No. 12 Oakwood Realty Co.; at 675 feet in No. 225 Gladys, and at 4,575 feet in No. 3 Marrs McLean-A. It will deepen No. 11 Marrs McLean-A.

In Other Pools

In the Saratoga Pool, the Cove Gas & Oil Co. shut down at 850 feet in No. 1 Cotton.

The Humble Oil & Refining Co. was shooting casing at 4,950 feet in. No. 71 Smith and shooting casing at 4,460 feet in No. 72 Smith, Goose Creek Pool. The Cort Oil Co. will deepen No. 1 Grace Adey. The Southern Exploration will go deeper in No. 7 Freeman, now at 3,000 feet. The Gulf Production Co. was drilling at 5,075 feet in No. 14 Chapman-Bryan, drilling at 800 feet in No. 8 Hoffman Gaillard; drilling at 3,990 feet in No. 26 Ashabel Smith, and will abandon No. 1 San Jacinto Bay State at 4,500 feet, where it drilled into salt water.

In the West Columbia Pool, The Texas Company was drilling at 2,625 feet in No. 83 Hogg.

In the Big Creek Pool, the Gulf Production Co. has a 730-bbl. well in No. 26 T. W. Davis at 3,700 feet, but it is showing 11 per cent salt water. No. 42 was drilling at 3,700 feet. The Texas Company's No. 2 Wheat was drilling at 2,300 feet.

In the High Island Pool, the McLean Oil Co.'s No. 11 Cade was pumping 30 bbls. of oil at 3,300 feet. No. 10 Cade and No. 6 Cade will be deepened.

In the Vinton Pool, in Louisiana, Marrs McLean has derrick up for No. 12 Gray; Vinton Petroleum Co. shut down at 2,725 feet in No. 7 Rescue; was drilling at 1,900 feet in No. 60 Gray, and shut down at 3,200 feet in No. 20 Vincent. The Gulf Refining Co. of Louisiana has made location for No. 3 43-Star-Vincent, and was drilling at 2,650 feet in No. 5 F. H. Gray.

In Brazos County, Texas, the Rio Bravo Oil Co.'s No. 2 M. Lanza was drilling at 1,299 feet in shale. This test is 3 miles southwest of Bryan.

In Chambers County, the Humphrey Corp. was drilling at 3,255 feet in shale in No. 5-B Kirby, Barber Hill.

The Gulf Production Co. abandoned a very deep and costly test near Fannett, in Jefferson County. Its No. 3-N Bordages stopped in hard shale at 6,488 feet. The Magnolia Petroleum Co.'s No. 3 fee flowed 200 bbls. and then quit. Half a joint of 4½-inch screen was set at 5,218 feet. Davis & Kinnear's No. 1 Gladys was drilling at 4,231 feet in sandy shale. Five miles northeast of Port Arthur Jim McMurry was drilling in gumbo at 800 feet in a test on the Crosby land.

In Liberty County, the Gulf Production Co.'s No. 1 Ganshaw, in the South Dayton area was in rock salt at 3,160-65 feet. The Harrison Oil Co.'s No. 2 Quintette, North Dayton, was drilling at 1,039 feet in sandy lime. Judge Titwell and others' No. 1 Gardner was drilling in gumbo at 3,115 feet, 5 miles east of Davis Hill.

In Rusk County, The Texas Company is drilling a wildcat, No. 1 Schultz, 19 miles southwest of Henderson, and was in gumbo and boulders at 1,682 feet.

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Gas Production Eclipses Oil Output

Feature of Week in North Louisiana-Arkansas Territory Was 108,000,000 Feet of Gas and Only 900 Bbls. of Oil

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Sept. 5.—Developments in the Arkansas-North Louisiana division the past week leaned more to increasing gas reserves than in opening new oil production. A total of more than 108,000,000 feet daily of initial gas flow was brought in through scattering small wells while new oil producers added less than 900 bbls. daily. New oil producers included a well from the Trinity horizon in the Pine Island Field, Caddo Parish, one in the Urania Field, LaSalle Parish, one small semiwildcat in Bossier Parish, two in the Irma Pool, Nevada County, Arkansas, and one small pumper in Union County, Arkansas. Chief among the gassers were two completions in the Carterville Field, Bossier Parish, Louisiana. The Waskom Field of western Caddo Parish added four small gas wells, the Monroe district two. The Pine Island Field got a gasser and, in addition, the Pine Island deep oil well completed is making around 15,000,000 feet daily.

Production Declines

The daily average production in the division continued to show a steady decline during the week with the total daily average production only 156,180 bbls. This was in comparison to 157,785 bbls. of the previous week. Daily average production by fields was:

North Louisiana	
Caddo light	15,295
Caddo heavy	5,170
Homer	4,710
Haynesville	7,200
DeSoto-Red River	4,000
Elm Grove	675
Bellevue	1,155
Cotton Valley	5,450
Urania	9,650
Pleasant Hill	710
Total	54,015
Arkansas	
El Dorado	5,720
Lisbon	3,260
Smackover light	10,255
Smackover heavy	79,480
Stephens	1,250
Nevada	2,100
Bradley	100
Total	102,165
Total both states	156,180
Total last week	157,785
Difference	1,605

Production now is nearly as low as it was during the disastrous floods of April and May when operations in many fields were almost totally suspended. The daily average output of the Smackover Field of Arkansas already is down below the low mark touched during the period of high water, the smallest production since before the boom days.

The decrease in daily average production is in face of the development of the Trinity horizon production in the Pine Island Field, which has yielded several good wells. The bringing in of new wells in that field, with the exception of a few days, apparently is not helping the total daily average output of the field and from all indications the wells are drawing against each other.

Pine Island

The total production of the deep Pine Island wells in the 24 hours ending at 7 o'clock Saturday was 4,765 bbls. This was from 14 wells and is no greater than the daily average production when there were only five or six producers. With the exception of certain freakish fluctuations or immediately following the bringing in of a big well, the daily production of the field never has been much over 5,000 bbls.

Due to the decline in output and the failure of opening new producing fields, the crude situation in this division continues tight and is being penalized by the market only because of overproduction in offending fields in other areas. Premiums are being paid readily for crude in this division, particularly Smackover.

The poor market, however, continues the prime factor in field operations here, accounting for the general inactivity which has prevailed except for a few minor booms in certain localities and the drilling campaigns which are existing in gas-producing areas, the latter due to the rapidly growing demand for natural gas for industrial and domestic consumption.

With the exception of a development of the Irma Pool of Nevada County, Arkansas has been virtually out of the picture for a month or six weeks. Some interest continues to be attached to the vicinity around Section 1-17-14, eastern Union County, but so far only one well, Ohio Oil Co.'s No. 1 Crain, has been able to find the pay sand. In North Louisiana the main activity in drilling for oil lies in the Pine Island Field, but interest there has slackened considerably and only occasional new wells are being started.

New Wells of Week

Chief in interest among new wells of the week was Gulf Rfining Co.'s No. 14 Tyson, Section 14-21-15, Pine Island Field. This is on the same lease of the Gulf Refining Co. on which two other deep wells, Nos. 12 and 13, have figured prominently in Pine Island history. No. 14 was bailed in at a depth of 3,760 feet, producing an estimated 15,000,000 feet of gas, 1,500 bbls. of salt water and made 95 bbls. of oil in the first 22 hours. However, Saturday the oil flow had increased to 185 bbls. daily and was still climbing. The Gulf also has another well on this lease, No. 15, which has casing cemented at the producing horizon and is due to be completed next week.

The Pine Island Field also got another deep well late in the week with the bailing of Pittsburgh Oil & Development Co.'s No. 1 Huckaby, Section 15-21-15, but the latter started out making only an estimated 15,000,000 feet of gas with just a showing of oil. However, the fact that it did not start flowing oil is not discouraging as some of the field's best producers made no oil at the start.

Cementing Casing Lower

Of particular importance now in the Pine Island Field are attempts of some operators to cement casing lower in the formation in an effort to shut off the heavy flow of salt water and much of the gas. The theory advanced is that the salt water and gas are together in the upper part of the horizon and that if casing is cemented lower this will be shut off and clean oil obtained.

One of the first wells to cement casing low was Haynes Brothers' No. 1 Spell, Section 15-21-15, which was completed a week ago, producing clean oil from the start with only enough gas to flow it. This well still is producing oil without salt water, making 325 bbls. in the 24 hours ending Saturday morning. However, due to the freakish conditions of production in the field it may not be known for some time whether this absence of salt water and gas is because of the low casing or not. Hence, results in other wells will be watched.

A semiwildcat in north Bossier Parish on the south flank of the north Bossier-Webster structure also was among the new wells of the week. It is Doern and associates' No. 1 Thomas, Section, Section 10-22-11, which was put on the beam producing 150 bbls. of fluid, of which about 5 per cent is oil. This well has 1 foot of sand at a total depth of 3,046 feet.

Irma Pool Interests

The Irma Pool of Nevada County, Arkansas, added two more good wells. J. J. O'Brien's No. B-2 Haynie and No. B-3 Moss, Section 1-14-21, each pumping 150 bbls. from depth of 1,174 and 1,191 feet. The only other completion in Arkansas was a 22-bbl. pumper in Smackover. The Irma Pool has been getting from one to two good wells each week, making that district the most interesting in Arkansas.

New gas wells were featured by two completions in the Carterville Field of northern Bossier Parish, where an active drilling for gas production is under way. Atlantic Oil Producing Co. and Woodley & Collins' No. 1 Matlock, Section 23-23-12, gauged 26,130,000 feet of gas daily with a rock pressure of 1,200 pounds. It was bailed in from sand at 3,069-71 feet. Magnolia Petroleum Co.'s No. 1 Rogers, Section 21, is another new Carterville gasser, producing 15,000,000 feet of gas from a sand at 3,086-88 feet.

Cotton Valley

North Webster Parish, Louisiana, in the Cotton Valley district, is the center of some interest in deeper drilling. That is where the Ohio Oil Co. recently completed an 8,000,000-foot gasser from a depth of 4,576 feet and in a district where several other small gassers have been completed. The past week Magnolia Petroleum Co. took over a 40 and a 60-acre tract from Gulf Refining Co. in Section 27-21-10, and already has locations for two more deep wells. Two other deep tests already are below the 4,000-foot level, those being in Section 23. One is being drilled by the Magnolia and the other by Woodley Petroleum Co.

A summary of the past week's operations shows 22 completions, 7 wells waiting on standard pumping rigs, 12 temporarily abandoned, 185 drilling, 9 rigs up, 31 derricks and 18 locations.

NORTH LOUISIANA

Bossier Parish

Humble Oil & Refining Co.'s No. 30 Bliss & Wetherbee, Section 15-19-11, deep Bellevue test, is drilling hard sand at 3,814 feet. J. S. McCullough's No. 3 Hodges, Section 25-16-12, Elm Grove district, is being rigged up. Palmer Corp.'s deep test in the Elm Grove district, the No. 4 Bossier, Section 9-16-11, is drilling hard lime at 5,282 feet.

Caddo Parish

In the Pine Island Field, Arkansas Natural Gas Co.'s No. 2 Lane, Section 13-21-15, tested salt water at 3,630 feet. Casing has been recemented to shut off the water. Benedum-Trees Oil Co.'s No. 2 Bashara, Section 23, is drilling at 2,400 feet. This company's No. 1 Huckaby, Section 14, is down 3,638 feet where 6⅝-inch casing has been cemented. Dixie Oil Co.'s No. 9 Caddo M. L. Co., Section 23, is drilling at 2,100 feet. This company's No. 89 Dillon, Section 14, is drilling lime at 3,206 feet. No. 90 Dillon is at a depth of 1,555 feet. Dixie's No. B-6 Files & Mabry, same section, has 10-inch casing cemented at 2,371 feet. This company also has completed a derrick for a deep test in Section 11. This will be No. 4 on the Huckaby lease. No. 10 Slattery, Section 27, is being underreamed at 4,030 feet. Golden Rod Oil Co.'s No. A-1 Hampton, Section 15, is drilling lime at 2,660 feet. Gulf Refining Co. has cemented 6⅝-inch casing at 3,620 feet in No. 10 Herndon, Section 15. This company's No. 14 Tyson, Section 14, should be ready to bail and test this week. At present it is coring at 3,760 feet. No. 15 Tyson also is near the producing level with 6-inch casing cemented at 3,655 feet. Haynes Brothers' No. 2 Murray, Section 14, is at a depth of 3,627 feet where 6⅝-inch casing is being set. These operators' No. 1 Spell, Section 15, was completed

(Continued on Page 118)

SETBACKS IN ARKANSAS WILDCATS; GASSERS IN CARTERVILLE DISTRICT

By Neil Williams

SHREVEPORT, La., Sept. 5.—Two gas wells in the Carterville Field of northern Bossier Parish, Louisiana, and a small producer in semiproven territory, all in northern Bossier Parish, were the principal wildcatting developments in the Arkansas-North Louisiana division the past week.

The wildcat district in eastern Union County, Arkansas, which has been watched closely by operators, especially those at El Dorado, received several setbacks during the week with the shutdown of Owenwood Oil Corp.'s No. 1 Goode, Section 31-16-13, and the coring of a salt water sand by Magnolia Petroleum Co.'s No. 1 Carroll, Section 1-17-14.

The former test drilled to a depth of 3,107 feet without even picking up the oil sand encountered by Ohio Oil Co.'s No. 1 Crane, Section 1-17-14, at 3,014 feet from which it still is pumping around 45 bbls. daily. The Owenwood test is about three-quarters of a mile northeast of the Ohio well. With the abandonment of Ohio's No. 1 Pumphrey, Section 1-17-14, several weeks ago that district now has failures on the northwest and southwest with the Ohio No. 1 Crain still the only producer. Ohio Oil Co. is drilling around 2,400 feet in its second test on the Crain farm.

The extreme southeastern corner of Union County, Arkansas, is to get two tests, for which derricks are being erected. This district is around 10 miles northwest of the Monroe gas field in northeastern Louisiana.

H. M. Harrell's rank wildcat, his No. 1 Camden Coal & Clay Co., Section 12-12-18, northern Ouachita County, Arkansas, tested dry in a sand at 1,610-19 feet the latter part of the week. It has been shut down waiting orders.

In Bienville Parish, Louisiana, Woodley & Collins are getting up a block centering in Section 21-16-10w. This is in a vicinity where a half dozen tests have been drilled bringing to light a couple of gas showings around 2,750 to 3,000 feet. Pure Oil Co. has abandoned its seismograph work in Winn Parish in an attempt to locate additional salt domes but now is shooting in southern Webster Parish, and northern Bienville Parish.

Nine scattering wildcat and semiwildcat tests were abandoned during the week, including one in Catahoula Parish, one in Franklin Parish, three in DeSoto Parish, one in Rapides Parish, one in Webster Parish, one in Bradley County, Arkansas, and one in Columbia County, Arkansas.

NORTH LOUISIANA

Bienville Parish

Edwin J. Forest's No. 1 Perritt, Section 11-17-6, has been shut down after drilling to 415 feet.

Bossier Parish

The play in the Carterville district of the northern part of the parish continued active during the week. Bahan & Davis' No. 2 Mays, Section 22-23-12, is drilling chalk rock at 2,435 feet. Beth-

(Continued on Page 119)

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BETTER BE SAFE THAN SORRY

Dale Field is Found Disappointing

Murchison and Sun Company Wells Prove Failures. Thought District May Be Small in Area and Production

By B. D. Stevenson
Staff Correspondent for Southwest Texas

SAN ANTONIO, Tex., Sept. 5.—Two disappointments were registered in the new Dale Field this week. Murchison Oil Co.'s No. 1 Copeland, three-quarters of a mile southwest of the discovery well is a failure and the Sun Oil Co.'s No. 1 Beatty, half way between the Murchison and discovery wells, is a failure. These are respectively the third and fourth wells to reach pay depths since the completion of the discovery well and they lop off many acres of ground thought by many to be sure producing. More than that, the Sun-Empire No. 1 Talley, which is three-quarters of a mile to the east of the discovery well, on what seems reliable information as this was written has not proven up as much serpentine as it should. It disappointed the field a little when the top plug stuck and left much of the cement in the casing. This was drilled out and enough cement had been forced around the casing to hold and the well was drilled in late last week and was to be bailed early this week. It is sure to make a well of some kind, or at least seems so at this time.

Week May Tell

But with these discouragements it is admitted the field is not starting off as well as it might. A lot of other wells in all directions are spudded in, however, and before this week is over the industry will probably know whether the Dale Field will amount to much or not. It is quite possible for it to prove up rather small in area and in production. Scarcity of water was one of the things that has held back the drilling, for with water a well can be completed to sand depths in a week. The discovery well topped serpentine, the pay formation, at 2,121 feet and stopped at 2,324 feet, presumably at the bottom of the serpentine. It is pumping about 70 bbls. daily. Murchison Oil Co.'s No. 1 Copeland found no serpentine but ran into the Austin chalk usually found under the serpentine, at 2,145 feet and at 2,173 feet was still in chalk and drilling. It may continue to the Edwards. Sun's No. 1 Beatty at 2,350 had found some chalky material but was not classed as being in the chalk though it was thought that it must encounter the chalk soon. It may continue to the Edwards also. It will at least continue to the chalk in order to find out where the chalk is.

Harry B. Gordon acquired from Pat Armstrong the water rights on the springs east of Lockhart and is laying a 10-mile water pipe line to the field. In the meantime water is being shipped by tank car with an arrangement that permits of loading a car of water every 15 miles. Tanks at Dale, which is close to the field, receive the water, which is piped to the rigs. More than a half dozen tests spudded in last week and should be on the sand this week. These springs east of Lockhart supplied most of the water for drilling the Lytton Springs Field.

Pat Armstrong, oil operator, and Carroll H. Brown, real estate man, have laid off the town of Dinges immediately adjoining the oil field and on the Katy railroad, and have platted it and are selling lots. It is immediately north of the discovery well and the turn the field took last week makes it possible that the production may lie in the direction of this town rather than south of the discovery well. Humble has staked about 11 locations in the field but it is understood will not start drilling any until the development of the field is farther advanced.

Lytton Springs Crude Cut

A cut of 15 cents in the price of Lytton Springs crude oil by the Humble Oil & Refining Co. is understood to be the diffeernce and excess that company was paying in the field over the Magnolia. Magnolia and Humble are the only concerns taking oil from that field. The number of producing wells in the Lytton Springs Field has within the last three months dropped from 329 to 313. Ever since the completion of the development of the field there have been 329 producing wells in the field each month without variation until recently. Production of the field for August averaged 1,960 bbls. daily compared with 1,965 the month before and about 16,000 when the field reached its peak six months after development started.

Medina County

Golden West Oil Co.'s No. 7 Schmidt in the Ina Field in Medina County is pumping about 60 bbls. of oil a day, free from sand. The Ina Field, discovered about two years ago, has had little development due to fine silty sand carried in solution in the oil which gummed up the liner and lessened production. The field was rotary drilled. Golden West drilled a cable tool hole and found a 3-inch oil sand at 872 feet where in all other wells casing was set. Shale under that sand was not logged by the rotary tools. It was all sand. At 885 feet Golden West set casing in No. 7 Schmidt on rock and cut off the shale and the sand below has been producing oil free from this silt. It looks like the problem may have been solved. The R. P. O'Brien No. 1 Nixon in Survey 531, 3 miles west, is being cleaned and will be on the pump this week for a test. It was improperly completed weeks ago but never tested. One of the theories of the field is that the sand in O'Brien's well, several feet thick, is the same as the 3-inch sand at 872 feet in the Golden West well. Sands are believed to thicken up up to the west and possibly a deeper sand, the one producing at 885 feet in Golden West's No. 7 Schmidt, will also be thicker 3 miles west and more prolific in production. Total depth of No. 7 Schmidt is 923 feet.

Kingsville Field

Feature of the Kingsville Field this week is the Humble's No. 2 Sexauer which blew out and ran wild making sulphur water and gas at 1,957 feet. It is in the west end of the field and seems to check with a gas sand 3 miles east in the No. A-1 Dennett, which blew out at 1,800 feet a couple of years ago. Humble's No. 4 Kleberg at 3,067 feet bailed sulphur water and only a little oil.

Refugio Field

In the Refugio Field the feature of interest is the Houston Gulf Gas Co.'s No. 6 Shelly which passed up all proven sands and started for a deep test. At 3,290 feet it went into a gas sand that on a drill stem test showed 700 pounds rock pressure and looks like a good gas well. Rock pressure is a little low compared with the depth. There is an 11-foot sand and casing will be set and the well completed. It is quite likely to prove a new valuable gas sand in that field.

MIRANDO TERRITORY

Duval County

Houston Oil Co.'s No. B-1 Lopez, Survey 319, Block 4, located in the Carolina-Texas Field at 1,712 feet, total depth, is estimated making 8,000,000 feet.

Newton Drilling Co.'s No. 1 Bruni, Survey 9, south of the town of Bruni at 2,316 feet made 7,000,000 feet of gas.

Jim Hogg County

Magnolia Petroleum Co.'s No. 26 Merchants State Bank, Survey 415, at 1,233 feet is a 25-bbl. oil well.

Webb County

Magnolia Petroleum Co.'s No. 1 Benavides, Survey, 2,234, located the farthest west of any well in the new Cole Field, recently opened in Webb County at 2,350 feet, gauged 30,000,000 feet with a rock pressure of 650 pounds.

New Locations

Houston Oil-Sun No. S-1 Benavides is located at corners of Blocks 75-76-129-130 in the Cole Field in Duval County.

Houston Oil (Roxana) No. 1 "F" S. Benavides, Block 97, in the Cole Field in Duval County, has derrick up.

Smilock's No. 1 F. S. Martinez, Survey 38, Block 4, in Jim Hogg County, is located 660 feet to SE corner.

Alworth-Stevens-Hild's No. 17 M. Garza, Survey 39, in the Alworth Pool in Jim Hogg County, has been spudded in and is drilling at 250 feet.

Magnolia Petroleum Co.'s No. 27 M. S. Bank, Survey 415, located in the Randado Field in Jim Hogg County, is having machinery moved in.

Harsten and others' No. 1 H. Guerra, Survey 43 in Starr County, is rigging up.

O. W. Killam's No. 1 Hinnat, Survey 74 in Zapata County, has derrick up, 1,980 feet to south line and 1,981 feet to east line.

SAN ANTONIO TERRITORY

Bexar County

N. A. Saigh's No. 4 Frees, Survey 49, in the Somerset Field, at 1,360 feet, is a 30-bbl. well.

Associated Petroleum Co.s No. 5 J. Kohler, in the same field in Survey 265, at 1,325 feet is making 7 bbls.

Caldwell County

Magnolia Petroleum Co.'s No. 1 Laura Rios, J. Henry Survey, in the Luling Field, made 20 bbls., total depth 2,132 feet.

Medina County

Golden West Oil Co.'s No. 7 Schmidt, Survey 15, in the Ina Field, at 923 feet is on pump and making 60 bbls. daily.

Witherspoon Oil Co.'s No. 1 Schmidt, in the Adams gas field in Survey 526, was abandoned dry at 2,270 feet in Edwards topped at 2,120 feet.

Live Oak County

Houston Oil Co.'s No. 18 Cartwright, Colchado Survey, at 2,034 feet is a gas well of 30,000,000 feet.

San Patricio County

J. M. Davis' No. 1 Welhausen & Driscoll, Section 68, Lot 8, at 3,020 feet has been abandoned dry.

Moody Oil Corp.'s No. 7 Rachal at White Point has been completed a gas well with a rock pressure of 1,015 pounds and turned into lines of the Houston Gulf Gas Co., making an estimated 50,000,000 feet daily.

New Locations

Sexat Oil Co.'s No. 12 Paschal is rigging up in San Patricio County and No. 9 Paschal is drilling at 1,450 feet, both tests in the White Point district.

J. E. Walsh has spudded in a test in San Patricio County near Sinton. George B. Pickett has spudded in a test in the same county.

Simmons Oil Co.'s No. 2 Reagan is a location in McMullen County.

Houston Gulf Gas Co.'s No. 2 Fisher is a location, 1,700 feet south of No. 1, in McMullen County.

Houston Gulf Gas Co. is rigging up for test in Jackson County in the Edna Field.

Houston Gulf Gas Co.'s No. 3 W. Hard in Refugio County has set 10-inch casing at 400 feet.

Associated Petroleum Co. has made location in Survey 265 of the Somerset Field in Bexar County for the Nos. 7 and 8 J. Kohler.

In Caldwell County, in the new Dale Field, Magnolia Petroleum Co. has made location in the G. W. James Survey for the No. 1 Taylor.

The Texas Company's No. 3 Plowman, in the Byrd Lockhart Survey in Gonzales County, is located 2,640 feet southeast of No. 1.

In Milam County in the T. J. Chambers Survey, 360 feet southwest of No. 2, W. A. Jones, has made location for No. 4 Smith.

Cole Gas Field—Duval

Houston Oil Co.'s No. B-1 Lopez, Survey 319, Block 4, located 155 feet to northeast and 465 feet to southeast lines, has sand at 1,703-10 feet. Newton Drilling Co.'s No. 1 Bruni, Survey 9, located 500 feet to northwest lines and 150 feet

(Continued on Page 123)

WILDCATS IN M'MULLEN COUNTY AND IN CORPUS CHRISTI TERRITORY

By B. D. Stevenson

SAN ANTONIO, Tex., Sept. 5.—Humble Oil & Refining Co.'s No. 6 Kohler in Duval County, 12 miles north of the Cole gas field and in Survey No. 400, at 2,778 feet, estimated last week as a 75-bbl. well, is pumping 30 bbls. It is 600 feet west of No. 4, which at about the same depth is pumping (or was when it first came in) 20 bbls. No. 4 was the discovery well and No. 6 is the only well drilled since. Considering the depth the field doesn't promise to overproduce the market yet. However, it means that Humble will do some more drilling in that part of the county, though it has announced no new locations yet.

Rycade Oil Corp. has fished at least half of the drill stem out of No. 1 Chittim in Maverick County, which at 5,630 feet is probably Southwest Texas' most important wildcat. At 5,517 feet about a year ago it ran into gas and oil which with deepening increased until it gauged 28,000,000 feet of gas with an estimated 75 bbls. of oil. It has been tied up now the third time with bad fishing jobs and the present job was about despaired of until about 600 feet of drill stem was pulled out and it is believed now the rest of it will be gotten out and the well saved. No. 2 Chittim, 3 miles southeast, has spudded in and No. 2 Sullivan, 4 miles northwest, has some gas at 4,885 feet.

Wildcat activities the past week in Southwest Texas have been rather unimportant with the exception of several new wells about to start. Houston Gulf Gas Co. is rigging up on No. 2 Fisher in the Calliham shallow oil field in McMullen County and will drill deep. Pickett's test at a point a little east of Crowther and at the north end of a structure with the Houston Gulf Gas well in the Calliham Field at the south end is standing at 3,030 feet with a showing of oil and the contract depth completed at 3,000 feet. It is standing but will eventually be deepened. Roxana is also reported to be figuring on a wildcat in McMullen.

Three new wildcats are getting under headway in the Corpus Christi country where National Oil Co. last week spudded in No. 1 Sullivan in western San Patricio County on a tract shot with the seismograph and nearly due west of Corpus Christi while George B. Pickett and J. E. Walsh each are preparing to start wildcats in San Patricio north of Nueces Bay.

Duval County

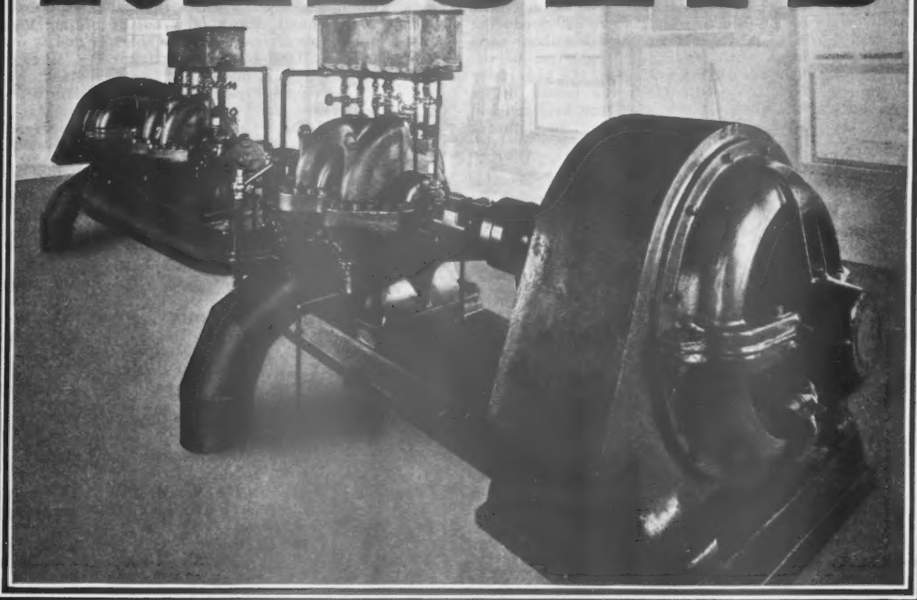
Schlessinger Oil Corp.'s No. 1 Moody, Survey 60, located 330 feet to north line and 1,650 feet to east line, is drilling at 1,840 feet. National Oil Co.'s No. 1 Ball, Survey 16, at 450 feet to north line and 150 feet to east line, has derrick up.

Jim Hogg County

Paizano Oil Syndicate's No. 1 Campbell, Las Vivoritas Grant, is drilling at 1,365 feet. Holden and others' No. 3 Jones, Share 27, Block 136, at 330 feet

(Continued on Page 124)

RESULTS



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Three Tests Down to Sundance Sand

Interesting Showings in Colorado. Ohio Company's Oregon Basin Well Reported Good for 21,000 Bbls. a Day

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Sept. 3.—Three tests to the new Sundance horizon on as many separate structures in Colorado showing gas in the formation just above the objective were the features of the week in the Rocky Mountain area. A good showing in the Muddy sand of the Dakota series in a wildcat on the Ant Hills structure in eastern Wyoming drilled by the Buck Creek Oil Co. attracted some attention to a new area, and the same company completed a small well that extended the producing area of the Lance Creek Field. Salt Creek reported a completion in the First Wall Creek sand that made 486 bbls. initial without shooting. The discovery well on the Oregon Basin structure in the Embar-Tensleep series is estimated capable of making 21,000 bbls. a day based on a 13-minute run in which a 250-bbl. tank was filled. Utah reports a failure in San Juan County that struck mica schist after going through the lower Pennsylvanian, and a test to be drilled to the Sundance near the Colorado line in the Vernal district, offsetting a big gasser drilled several years ago, but which stopped before reaching the Sundance. New Mexico reports some small wells in the San Juan Basin, a 30-bbl. producer at Artesia, and a failure at 4,888 feet in Lea County.

The Texas Production Co.'s No. 1 Rhodes, NW, Section 22-26-27, Lea County, New Mexico, topped a gas horizon at 3,105 feet and at 3,107 feet the well was making between 8,000,000 and 10,000,000 feet of gas. Reports to the company's headquarters did not mention the quality of the gas. The location is in the southeastern corner of Lea County, just across the line from Winkler County, Texas, and a producer at this point would go a long way in connecting up the Winkler County area with southeastern New Mexico. The well was in salt at around 1,300 feet. At 3,040 feet it encountered a flow of about 2,000,000 feet of gas which blew the tools up the hole 15 feet where they lodged and resulted in a fishing job over a period of several weeks. Last week the hole was cleaned to the old bottom and the gas restored. An additional 65 feet of depth increased the gas flow to the present estimate.

Colorado

The tests in northwestern and western Colorado which are in close proximity to the Sundance sand in the Jurrasic are at present holding the attention of the operators in anticipation of important developments within the next few days. This sand, which lies 600 to 700 feet below the Dakota, has been proven productive in the only well in the state, drilled to that horizon, that being the Midwest Refining Co.'s No. 4 Parkinson on SE Section 22-4-92, Iles Dome, in Moffat County, which came in last spring at 3,242 feet with an initial production of 2,600 bbls. Previous to that discovery most all of the tests stopped in the lower Dakota, or upper Morrison. Three wells on as many separate structures are now within striking distance of the new objective, and all three give favorable indications of finding oil in the Sundance, in which event, an ambitious drilling campaign on half a dozen or more structures may be expected.

The Midwest Refining Co.'s No. 18-SD, SW Section 23-4-92, Iles Dome, one-fourth of a mile east and a little north of No. 4 Parkinson, the discovery well, was reported last week to have gas in the Morrison above the Sundance at 3,115 feet. The hole is bottomed at 3,174 feet where operations were suspended to move back the boilers and make preparations for drilling in. While the initial flow was probably in excess of 10,000,000 feet, by the time the instruments arrived and a measurement was taken, it showed 5,000,000 feet, the gauge showing a back pressure of 1,205 pounds in 60 minutes. The gas horizon lies immediately above the oil as found in the discovery well. The next 100, or more, feet will tell the tale.

Sundance May Produce

Twelve miles to the northeast of the Iles Dome is the Moffat Pool which has been producing from the Dakota sand at around 3,800 feet since early in 1924. One well is drilling at present, the limits of the pool in the Dakota having been definitely established by a number of edge wells which came in early in the spring with water in the sand.

The Texas Production Co.'s No. 10 Knowlton, Section 33-5-91, Moffat Dome, was drilled an additional foot yesterday to 4,228 feet and oil rose 600 feet in the hole. The well made about 40 bbls. while drilling was in progress. No additional oil came in during the night. Drilling was resumed in a hard shell above the Sundance sand, the objective. The presence of the oil in the Morrison is a very hopeful indication for the Sundance being productive as the Morrison is looked upon with little favor as an oil-bearing horizon.

Five miles to the south of the Iles Dome is the Thornburg structure upon which the Marland Oil Co. of Colorado drilled a test to the Sundance in its No. 1 Clark, Section 21-3-91, and failed to find anything in the Sundance. However, the company, jointly with the Union Oil Co. of California, is digging cellar and preparing to deepen No. 9-A Wymore on Section 16-3-91, which stopped at 1,657 feet when the Clark well proved a failure.

The third Sundance sand test now at an important stage is the Texas Production Co.'s No. 2 Emerald, Section 31-2-102, Rangely Dome, Rio Blanco County, which had 12,000,000 to 15,000,000 feet of gas in a sandy horizon at 3,550-64 feet, showing a pressure of 1,300 pounds. This horizon is below the Dakota and correlates with the gas horizon above the Sundance at Iles and Moffat. The gas was mudded off and the drill is in a sandy lime at 3,605 feet, feeling for the Sundance. The results in the three wells undoubtedly will have a very important bearing on future prospecting in northwestern Colorado, northeastern Utah, and other areas.

Florence Pool

Continental Oil Co. has completed a 10-bbl. well in its No. 1 G. & T., Section 35-18-70, in the Four Mile extension of the Florence Pool in Fremont County. Same company is starting three new wells in Fremont County, these being No. 1 Shaw, SE NW, Section 2-19-70; Francis Hall No. 2, SW SE, Section 35-18-70; and Steinmier No. 4, SE NW, Section 35-18-70; all in the west extension of the Florence Pool. It is also spudding at 35 feet in its No. 1 Walters, NW NE, Section 10-21-69, in Custer County, 12 miles south of the center of the old Florence Pool. This well will test the southern end of the south extension of the pool which with the west extension describes an arc about 18 miles from end to end from the Custer County line north to Florence and west to Canon City, a rather extensive area for a pool that produces only from the shale.

General Petroleum Corp.'s No. 2 Wilcox, Section 6-47-19, Paradox structure, Montrose County, near the Utah line, appears to have bottomed the immense beds of salt through which it has been drilling. The hole is now reported down 6,000 feet, the last 100 feet having been in hard shale. If it proves to be through the salt, it will be the first of the tests in southeastern Utah and western Colorado to accomplish that result. Altogether it cut about 5,000 feet of salt. The test is being drilled with a rotary.

Las Animas County

The Parker Club's No. 1 Adams, Section 32-34-56, near Branson, in Las Animas County, southeastern Colorado, is drilling in red lime at 2,040 feet after shutting off the last of the series of thin water sands encountered in the last 500 feet of hole. Interesting developments in this well, a test to the Pennsylvanian, are not expected under 2,400 feet. In the same general area, Foley & Goldsworthy's No. 1 Government, Section 11-30-60, Model Dome, Las Animas County, is drilling at around 1,700 feet, the 10-inch being carried at 1,665 feet. There have been rumors afloat that this well was in granite at around 1,500 feet, but these have been denied several times. Horace Wilcox, of Tulsa, is reported to have had samples sent to the state chemist the past week for analysis, who found them to be hard quartz sand. He stated that any idea that it was granite was entirely erroneous.

Western Oil Leasing & Royalty Co.'s No. 2 Hunter-Green, Section 5-1n-102, Rangely Dome, showed for a small shale producer at 505 feet. This is one of a series of shallow wells being drilled under a joint agreement with the Joe Miller Drilling Co. The Rangely Dome has been producing high gravity oil from shallow depths for a number of years, the presence of this oil being largely responsible for the deep tests now drilling.

E. B. Klem and associates, in their No. 1 Ferguson, Section 12-34-7, near Bayfield, in La Plata County, a considerable distance east of the various Red Mesa tests south of Durango which proved to be failures, is bottomed at 1,900 feet where it is held up by a fishing job. A 10-foot vein of coal was cut at 1,890-1,900, indicating that the test has entered the Kirkland formation.

The Great Basin Oil Co., an Arizona concern, has taken over the Ralph R. Burke operation on the Mancos structure in Montezuma County, 15 miles east of the four states corner. This operation is on a 4,800-acre Ute Indian lease where seven shallow wells have been drilled to the Dakota at 750 feet, finding shale oil above that horizon and water in the Dakota. The company has installed and placed in operation a 50-bbl. skimming plant erected by the Smith-Kittel interests of Bloomfield, N. Mex.

Wyoming

The Buck Creek Oil Co., a subsidiary of the Continental Oil Co., has made an interesting discovery in its No. 1 Delahoyd, NE NE, Section 25-37-63, on the Ant Hills Dome, in Niobrara County, about midway between the Lance Creek and Mule Creek fields. A sand, the first encountered in the test and believed to be the Muddy, was topped at 3,946 feet, following the setting of the 6¼-inch casing at 3,940 feet, and showed considerable

PRODUCTION OF MEXICAN FIELD 17,162,609 BARRELS LESS

By George Blardone
Staff Correspondent, Mexican Fields

TAMPICO, Mexico, Sept. 3.—The production of petroleum in the Tampico-Tuxpam embayment of the oil fields of Mexico for the first six months of the current year can be placed at 32,545,547 bbls. This is a decrease from the first six months in 1926 of 17,162,609 bbls. The first six months in 1926 totaled 50,708,156 bbls.

The production in the first six months of the current year, in the Tampico-Tuxpam embayment, can be divided as follows: Northern fields, the heavy oil district of Mexico, 21,600,058 bbls. south fields, the light oil district, 10,945,489 bbls.;

Leaving aside the productive areas of the north and south fields, as above indicated, the fields that have made Mexico's petroleum history, consider at this time the Isthmus of Tehuantepec, in the south part of the rather extensive state of Vera Cruz. Here one company (Mexican Eagle Oil Co., Ltd.) has produced approximately 1,500,000 bbls. in the first six months of the current year. This is an increase over the full year of 1926 of, say, 190,400 bbls. The company produced in the Isthmus country, in 1926, 1,309,600 bbls.

Distribution

In so far as the distribution of the first six months' production is concerned consider the following:

	Barrels
Total production six mos. 1927	32,545,547
Crude imported, six mos. 1927	2,178,078
Withdrawn from storage, six mos.	1,908,318
Total	36,631,943

Vessel shipments for the period in question totaled 29,975,912 bbls. This leaves a difference, academically expressed, of 6,656,031 bbls., which can be credited to domestic consumption, refinery losses, field operations, etc.

The distribution of vessel shipments for the first six months of 1927 was as follows: To the United States, 18,098,991; to Cuba and other West Indian islands (except American possessions), 5,116,655 (Note—Of this volume no doubt much of it was eventually re-routed to Europe and the United Kingdom, as many tankers are cleared to Nassau "for orders"); Mexican coastwise deliveries, 1,562,727 (of which volume a part was probably re-cleared from Puerto Mexico for export); United Kingdom, 1,508,390; South America, 773,818; Continent, 454,989; Central America, 126,331; Australia, 38,722; Canada, 77,033; Java, 23,131, and bunker deliveries, which are added to balance the whole, total, 1,848,369.

The classes of the oils indicated in the vessel shipments can be epitomized as follows: Crude, all north fields' production, 14,193,502; topped crudes (fuel oil), 10,464,659; other refined oils, 2,697,244; asphalt, 772,138; bunker deliveries (to balance), 1,848,369.

Oil in steel storage in Mexico on July 1, 1927, can be placed at 13,036,519 bbls. These figures, of course, do not include such purchased oil as might be stored at interior points in the Republic. Such volume of oil in storage, however, is of no economic moment in considering available stocks in storage.

Wells Completed

There was completed in the north fields of the Tampico-Tuxpam district during the first half of 1927, 340 wells, of which 112 were rated as commercial producers

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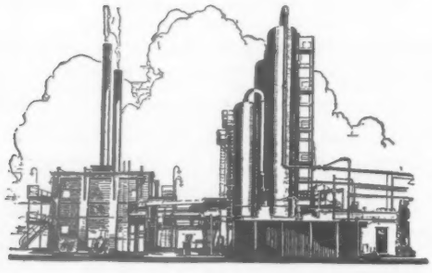
THE CROSS CRACKING PROCESS

FOR CRACKING ANY OIL—

crude, fuel oil, gas oil, or kerosene

Individual refiners have their individual cracking problems. Some may use a kerosene distillate as the charging stock. Others may be obliged to run on gas oil. Then again, at one time it may be more profitable commercially to crack fuel oil, —at other times, other oils.

Under these conditions, the flexibility of the CROSS CRACKING PROCESS is an appreciable asset that cannot be over-emphasized. It enables the refiner to work with any kind of charging stock. And to operate as efficiently on one kind as on another.



KELLOGG

CROSS CRACKING PLANTS—BUBBLE TOWERS—PIPE STILLS—HEAT EXCHANGERS—GRAY TREATING TOWERS—TREATING PLANTS

THE M. W. KELLOGG CO., 7 DEY STREET — NEW YORK

KANSAS CITY, MO., 700 BALTIMORE AVE. — SAN FRANCISCO, CAL., 444 MARKET ST.
LOS ANGELES, CAL., 329 PETROLEUM SECURITIES BLDG.

oil. The well was immediately shut down until officials of the company from Denver could arrive and determine the next step to be taken. No estimate is being made as to what the well will do. The oil is of about the same grade as the Lance Creek crude and the showing is considered important. Some additional work will have to be done before a test is made. It is the most promising discovery made in eastern Wyoming for some time and is strictly a wildcat, the nearest production being in the Lance Creek Field 12 to 15 miles to the southeast. The drilling was expected to be deep at the start, but formations cut indicated that the structure was running about 450 feet higher than the surface geology indicated. If the Muddy sand, should that be the horizon, does not prove a commercial producer, the Dakota and Lakota, the first productive at Lance Creek and the latter at Mule Creek, remain to be tested. The structure is not considered a very large one.

The Buck Creek Oil Co. also has a new producer in the Lance Creek area in its No. 1 Dielman, NE NE, Section 7-35-65. The total depth is 3,440 feet and it is estimated good for 50 bbls. The Muddy sand at 3,200-5 feet carried water, and the Dakota was topped at 3,422 feet. It means a slight extension of the producing area, being southwest of the center of the field and one-fourth to one-half of a mile north and east of a recent completion by the Wyoming-Montana Co.

Salt Creek Completions

Two completions in Salt Creek were reported by companies affiliated with the Midwest. Wyoming Associated Oil Co.'s No. 24, SW Section 14-40-79, was completed at 1,311 feet and without being shot had an initial production of 486 bbls. It will be pumped. This is rather a good well for the First Wall Creek sand, the second oldest producing horizon in the field. The other completion was Wyoming Associated's No. 21-L, SW Section 25-40-79, which had an initial production of 125 bbls. from a total depth of 2,257 feet. E. T. Williams Oil Co.'s No. 21-A Middy, Section 11-39-79, is swabbing from a total depth of 2,563 feet, and is an average well for that part of the field.

In the Big Muddy Field, the Continental Oil Co.'s No. 57 Whiteside, Section 9-33-76, is cleaning out and swabbing at 3,142 feet and looks like it will make a good producer. No. 59 Whiteside, Section 9-33-76, is drilling at 2,400 feet. Texas Production Co.'s No. 33 Crary, Section 9-33-76, is getting ready to pull the 12½-inch from 900 feet up in an effort to overcome trouble at 3,990 feet.

Texas Production Co.'s No. 8 Keenan, Section 22-6n-3w, Maverick Springs Field, in Fremont County, was completed at 1,735 feet and had an initial production of 150 bbls. This about ends the company's work in that area for the present, there being no outlet for the black oil. Union Oil Co. of California and the Ohio Oil Co. also have black oil production in this district shut in for lack of pipe line facilities.

The Ohio Oil Co.'s No. 3 State, Section 36-48-100, on the Buffalo Basin structure, Park County, is being completed at 1,637 feet with a production of 6,000,000 feet of gas after shutting off water at 1,635 feet.

Oregon Basin

In the Oregon Basin area in Park County, where there is more than ordinary interest due to the discovery of oil in the Ohio Oil Co.'s test several months ago, trading of leases and permits continues. The New York Oil Co. is reported to have purchased the Owens permit in Sections 29 and 30-52-100 and to have taken an option on the Beck permit covering four sections. Producers & Refiners is straightening out the legal kinks in taking over the Atherly, Frisby and Hand permits preliminary to making a test. The permits are being consolidated under authority of the Secretary of the Interior. The drilling wells still have some distance to go before finding anything out of the usual.

Speculation over the Ohio's No. 3 Sonners, the discovery well in the Embar-Tensleep series on the Oregon Basin Dome, continues to be an interesting topic. Rumors that the well had been opened for representatives of the United States Bureau of Mines are now accepted as a fact. They estimate that the well is capable of making 21,000 bbls. in a 24-hour period, this estimate being based on a 13-minute run in which a 250-bbl. tank was filled. Facilities for making a 24-hour test are nearing completion.

Utah Oil Refining Co.'s No. 1 Government, SE NW, Section 29-56-97, Garland Dome, is drilling in lime at 2,100 feet and carrying 8¼-inch casing. This will case off about 20,000,000 feet of dry gas in the Morrison sand which it has just penetrated, and should encounter the Sundance horizon at around 2,250 feet.

La Barge

In the La Barge district, Utah Oil Refining Co.'s No. 1 Bird, SE Section 21-27-113, reported last week in an oil sand at 1,290 feet, is still an unknown quantity due to pipe trouble. Three joints were lost at 1,270 feet. These have been recovered and it is preparing to rerun the 10-inch. Same company has another test under way in its No. 1, NW Section 10-26-113, drilling at 665 feet after cementing the 12½-inch at 664 feet. W. D. Newlon's test on Section 12-26-113, nearly 2 miles from the nearest producer, had a showing of oil at 609 feet below 10 feet of hard lime. Charles Lackey and others, in Section 12-28-114, are rebuilding rig destroyed by fire. Well was reported making 3,000,000 feet of gas at approximately 600 feet when rig caught fire. Midvale Oil Corp. has contracted for a 2,500-foot test on SE Section 8-27-113. Frontier is expected at 1,850 feet.

On the Black Mountain structure in the Big Horn Basin, Utah Oil Refining Co.'s No. 2 Weller, NE Section 35-43-91, was showing for a producer in the Embar at 2,918 feet. Oil went over the derrick after a shot and then the rig was struck by lightning and burned. It is now being rebuilt. Same company's No. 2 State, SE Section 36-43-91, is drilling in red shale at 1,570 feet. No. 1 Avery, NW, Section 5-42-90, is in gray shale at 3,271 feet. It was in the Embar sand at 3,100 feet to 3,262 feet, and showing some oil. No. 1 Fort Collins, SE Section 26-43-91, is bailing and testing water at 3,438 feet. In addition to these wells, the company has two wells in the Embar and three in the Tensleep completed and shut in.

Union Oil Co. of California's No. 1-A Burnham, NW Section 28-43-91, in Hot Springs County, is being abandoned at 2,717 feet. Same company is rigging up its No. 1 Taylor, NW Section 22-47-101 in Park County.

Utah

Southeastern Utah had another disappointment this week when the Utah Southern, General Petroleum and Utah Oil Refining companies decided to abandon No. 1 Nobel, Section 28-40-18, on the Cedar Mesa structure in San Juan County, which last week was reported drilling in sand in the lower Pennsylvanian. The hole is bottomed in mica schist. It had granite wash from 3,340 to 3,620 feet, and the hole will be abandoned immediately. This test reached much deeper geological horizons than any of the southeastern Utah tests. It was south of the salt dome structures along the Colorado River.

Utah Oil Refining Co. is going back into the Vernal area to put down another test near a well drilled in 1925 on SW Section 25-5s-22, about 20 miles west of the Colorado line. This well had an estimated flow of 60,000,000 feet of gas in a sand below the Dakota at 1,685 feet, supposed to be the Morrison. At the time it was drilled, the Dakota was the objective in the wells on the Colorado side. The subsequent discovery of oil in the Sundance below the gas horizon in the Morrison makes the Utah test more attractive and the new well will have the Sundance at 2,000 feet as its objective. The first test had 1,000,000 feet of gas at 650 feet and a show of oil at 900 feet.

McGee & Holes Syndicate's test on Section 14-15-10, near Price, encountered a sand at 2,215 feet called the Salt Wash. Drilling is proceeding below 2,225 feet. Texas Production Co.'s No. 1 Shipley, Section 5-27-14, Sweetwater structure, had 5 bbls. of water per hour at 610 feet and is drilling in shale at 625 feet.

VULCAN OIL NO. 1, TURNER VALLEY, NOW THOUGHT TURNING TO OIL

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Sept. 3.—In the Turner Valley Field, a significant development is reported in connection with the Vulcan Oils, Ltd.'s No. 1, LSD 11, Section 13-20-3w5, whose production is stated to be showing indications of crude oil. Vulcan No. 1 proved to be located in the syncline between the two main folds of the Turner Valley, and got the Madison limestone at considerable depth. At 5,004 feet the well got pay in the Madison lime, with a production of about 115 to 120 bbls. a day of 73 crude naphtha, similar to the Royalite No. 4 production, though in less quantity. This production was in the form of a crude naphtha recovery from wet gas. The well periodically freezes and then after about an hour thaws itself. On thawing it is now reported that large quantities of crude, testing 57.5 Baume, are first thrown off; while the ordinary crude naphtha run is stated to test 67 Baume, instead of the original 73 Baume. The well has been producing about nine months. It is regarded as possible that the well at this low point in the syncline, having blown off some of its wet gas, is gradually turning into an oil well.

In the Skiff Field, southern Alberta, Devenish Petroleum's No. 1, LSD 5, Section 27-5-14w4, has resumed drilling at 3,090 feet to test the sand further. The well had a bailing production of 250 bbls. after going 10 feet into the sand, first met at 3,080 feet. It is believed there are two potential oil sands underlying the Ellis on the Skiff structure, with possibilities of lighter oil in these lower horizons. The crude at 3,090 feet tested around 23 Baume. Drilling is proceeding carefully and casing is on the ground to run a new string, if it is necessary to shut off any water flow encountered.

In the Cypress Hills district, near Medicine Hat, Eagle Butte Oil Co.'s No. 1, Section 31-7-4w4, is reported rigging up.

Gas Production & Transportation, Ltd.'s No. 1, NE Section 21-4-18w4, is reported rigging up, replacing the outfit destroyed by fire a few weeks ago. The test was down about 450 feet. It is expected to resume drilling about September 15. In the Foremost Field, Canadian Western Natural Gas Co.'s No. 8, LSD 12, Section 5-6-10w5, is reported to have got the top of the Foremost sand, and is being drilled in.

In the Viking Field, east of Edmonton, Northwestern Utilities' No. 14 has been brought in with an estimated flow of 5,000,000 feet a day from the Viking sand. Northwestern Utilities' No. 13 was brought in about six weeks earlier with approximately 8,000,000 feet a day in the same horizon. The two wells complete the company's drilling program for 1927. The two drilling crews finished the two wells in 73 days, No. 13 taking 35 days and No. 14 requiring 38 days, owing to a couple of fishing jobs. The wells are being put on the line to Edmonton. Crews are now at work taking

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Union Oil Co. of California's No. 1 State, Section 16-30-25, Lisbon Dome, is drilling below 3,270 feet, the formation being salt with occasional limestone shells. Embar Oil Co.'s No. 1 Big Six, Section 34-25-21, is drilling in gray sandy shale at 4,275 feet.

New Mexico

In the San Juan Basin in northwestern New Mexico, the shows of oil and gas at shallow depths reported during the past few weeks have been in just large enough quantities to encourage the operators in the areas affected, with nothing occurring to change the general outlook. The best of the recent completions was in the Seven Lakes district in McKinley County, where several of the larger operators have been endeavoring to open a commercial pool. Oil was discovered accidentally in this region in 1911 in wells drilled for water at depths varying from 350 to 500 feet in the sands of the Mesa Verde formation which underlies the Tertiary (or recent) surface covering. The best of these were estimated good for 10 bbls. a day. Below the Mesa Verde, in descending order, are found the Mancos, Dakota and McElmo formations, all belonging to the Cretaceous series. The Dakota is the equivalent of the Dakota oil pay of the northern Rocky Mountain area and the Woodbine of North Louisiana and East Texas.

The Midwest Refining Co.'s No. 1 Hancock, NW Section 1-17-9, which showed for 224 bbls. in one of the Mesa Verde sands, was the direct cause of the drilling now in progress. This well went down to test the Dakota and has cut several water sands below the oil. It is in another water sand at 3,055 feet and still drilling. The same company's No. 34, SE SW, Section 36-18-9, recently reported a completion, cut the sand at 1,614-29 feet and made 2½ bbls. per hour on a test. The Welch & Hurst well on the SW NE, Section 1-17-9, which the Midway took over to deepen, was drilled to 1,610 feet and plugged back to 1,586 feet where it made 8 bbls. of oil and 10 gallons of water in a 24-hour test. H. L. Williams' No. 1 Pettit, SW cor., Section 30-18-8, about which there have been varying reports, some crediting it with being good for 250 bbls., appears according to later reports, not to be up to the earlier expectations. The total depth is 2,000 feet and a sand was cut at 1,855-1,960 feet. It has not been tested, but is conservatively estimated good for 5 to 10 bbls.

Test on Chico Dome.

The Ohio Oil Co.'s No. 1 Voght, center of S half SW, Section 18-16-9, which was reported last week as plugged and abandoned at a total depth of 1,380 feet, went through the sand at 895-1,070 feet. The Ohio, while failing to find anything worth while on the Voght structure, apparently is not satisfied as it is moving in material for another test on the Chico Dome in the same general area, the location being in the NW cor. of Section 25-17-6. Other operations in that area include S. Dysart's No. 1, SW cor., Section 21-14-9, which is drilling up the bailer at 1,340 feet; Cook & Beazley's No. 1, SW cor., Section 17-18-10, shut down at 340 feet; Inland Oil Co.'s No. 1, NW cor., Section 22-18-10, which is underreaming the 8¼-inch with a total depth of 763 feet, having cut a water sand at 595-605 feet; and the Hogback Oil Co.'s No. 1, SE cor. NW, Section 12-16-10, which is drilling at 1,320 feet. This test, which is on the same structure tested by the Ohio in its No. 1 Voght, went through a water sand at 1,115-32 feet.

In the area farther to the north, the Portage Oil & Gas Co.'s No. 1 Hubbell, SW cor., Section 25-31-13, is drilling at 820 feet after setting the 8¼-inch at 790 feet. The same company's No. 1 Davis, NE SE, Section 24-30-13, was completed recently as a gas well at 2,160 feet. Paramount Oil Co.'s No. 1 Sheets, SE cor., Section 15-29-11, is shut down at 785 feet. On a test it showed for 1 bbl. of oil and 3 bbls. of water. This operation formerly was known as Wiley & Craft. The T. C. N. Oil Co.'s No. 1 Lanier, NW cor. SW, Section 9-29-11, completed at 916 feet as a gas well, is

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Seal Beach Starting Its Third Ascent

Peak From Town Lot Deep Sands Expected Around Latter Part of This Month. Huntington Beach Has Surprise Completion

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Sept. 3.—Daily production in the Seal Beach Field has started its third major upward trend and all indications point to a further advance which, if nothing unforeseen develops, will continue during the greater part of September with the peak expected to occur somewhere around September 20 or 25.

The present ascent of production is due almost entirely to deepening operations in the town lot, or Alamitos Heights, section of the field, where the number of deepening projects is as numerous as transatlantic fliers. Many of these potential deep zone producers are below the 5,000-foot level and hence early completions can be anticipated.

The number of new wells and recompletions during the current week was not particularly large but in view of the present status of those going after the lower sand we may anticipate larger completion lists from now on. The Petroleum Securities has 15 wells below the 5,000-foot level and a like number just above this point, all of which are expected to make a bid for production in the Lovell, Bailey or Wahl zones between 5,100 and 5,400 feet within three or four weeks. George F. Getty is also going after this lower sand in an aggressive manner and should have five or six new wells and recompletions on production soon. Getty's last completion was No. 1 Alamitos, which came in under a natural flow doing 1,925 bbls. of clean 28.9 gravity oil daily. This well was originally finished last May doing 975 bbls. per day from 4,685 feet but was redrilled and deepened to 5,101 feet, from which depth it is now producing.

Good Completions

Harold J. Barneson, son of Capt. John Barneson, chairman of the board and organizer of the General Petroleum Corp. of California, redrilled and deepened his No. 1 Tichenor from 4,744 feet to 5,307 feet and changed a small well into a satisfactory commercial producer flowing 1,725 bbls. of clean 28.9 gravity oil daily. The Marland finished an exceptionally good well during the early part of the week and will probably follow up this success with several more in the near future, although it must be remembered that the Marland is not engaged in competitive drilling except to the extent of protecting its property adjacent to the town lot area from undue drainage. This company, while it is running eight strings of tools at present and has developed a daily production of approximately 17,000 bbls., is conserving its resources by refraining from drilling up its excellent holdings in the older section until a more opportune time. It is interesting to note that the three major companies, Marland, Associated and Standard, operating exclusively in the older section, have the largest aggregate daily production at present, as well as the most consistent average daily well production. The Associated's present daily production aggregates approximately 10,000 bbls., while the Standard follows with something like 7,000 bbls. No. 6 Selover, the Marland's current completion, is a new well finished in the Selover zone at 4,912 feet, from which depth it registered an initial of 2,145 bbls. of 26.7 gravity oil daily.

The California Petroleum Corp.'s No. 1 Smith, a new well in the town lot section, registered an initial of 1,480 bbls. daily from the 5,376-foot level and with the gas pressure holding up consistently the outlook is favorable for a continuance of this average for some time. The Calpet is deepening three other wells to this lower Wahl zone, in addition to No. 5 Alamitos, which has just been turned loose from 5,403 feet. This recompletion, which originally came in doing 750 bbls. from 4,675 feet, is now flowing 1,610 bbls. of 27.2 gravity oil daily. The Superior Oil Co., with five former upper zone producers headed down to the lower sands, should boost its present production of approximately 2,000 bbls. per day quite substantially within two or three weeks. No. 2 on fee lease No. 1 picked up the top of the Wasem zone at 5,162 feet and the bit is still going ahead in the oil sand with the outlook exceptionally bright for good production. M. A. McCrate finished his first successful commercial producer in the town lot section a few days ago by bringing in No. 1 Alamitos flowing 1,130 bbls. of clean 28.7 gravity oil daily from 5,192 feet. The Associated's No. 16 Hellman, a deep test in the extreme eastern part of the old field, is still in a gray sand at 5,542 feet and, while oil sand was logged down to around 5,350 feet, no further showings have been found since passing that depth. Work was started early in the week on a rig for No. 17-A Hellman, a replacement of No. 17, which was destroyed by a disastrous gas blowout several weeks ago while the well was standing cemented.

Huntington Beach

The town lot area at Huntington Beach jumped into the limelight again with an unexpectedly large well resulting from the completion of J. E. Hall's No. 3 Marah, which came in under a natural flow doing 1,192 bbls. of clean 22.5 gravity oil daily from 3,855 feet. This well is attracting considerable attention as the day of big production in this section is over but, notwithstanding this, material is already on the ground for three direct offsets and orders have been issued to give them the gun as soon as possible. Hall followed up this big completion with another new well on the following day. This was his No. 5 Allen, which was brought in pumping 250 bbls. daily from 3,876. The Bruce Oil Co. also finished an unusually large well when its No. 1 Huntington was turned loose from the 4,357-foot level. The initial 24-hour tank gauge showed this new producer to be making 760 bbls. of clean 25.1 gravity oil daily. The Crudoil Co.'s No. 16 Huntington, while it was not as large as the other wells just mentioned, registered an initial in excess of the average daily production of new wells finished during the past four or five weeks. This new well, which was carried down to 4,340 feet and finished with a 6⅝-inch oil string carrying 425 feet of perforated, came in doing 395 bbls. of 21.8 gravity oil daily.

Completions in this field during the current week were far above par, in fact it has been a long time since Huntington Beach has yielded more than three or four new wells in any single seven-day period and, while this looks encouraging, it will probably never occur again as drilling operations are decreasing from week to week. The World Petroleum Co.'s No. 5 M. & B. in the town lot area failed to respond with a natural flow after several days of artificial stimulation and it was accordingly placed on the beam at 4,370 feet, from which depth it showed an initial pumping of 490 bbls. daily. No. 6 on the same lease was a considerably smaller well as it showed an initial pumping of only 160 bbls. of 21.7 gravity oil daily from 3,753 feet after being plugged back from 3,772 feet because of bottom water. Upon the completion of these two new producers, Nos. 7 and 8 were spudded in and both were well under way at the close of the week.

Camp Grounds Leased

The 10-acre camp grounds of the Methodist Episcopal Church, east of the town lot area at Huntington Beach, have again been leased for drilling and lease requirements call for early work. This property has been held by three or four oil companies on several occasions but actual drilling was not undertaken as it looks to be a rather long shot. The Superior Oil Co. was the last to hold it under lease but surrendered the property five or six months ago as subsequent developments did not warrant work. J. E. O'Donnell, who is drilling an outpost about a mile northeast of the California Petroleum's Buck lease in the extreme northern part of the Huntington Beach Field, has not yet found any indications of oil from the grass roots down to 4,000 feet, although a few minor gas showings have been logged from time to time. This well was undertaken with the knowledge that the odds were against favorable accumulation of oil in this area, although there exists a bare possibility that commercial production may be developed. The Lofton Oil Co. finished an excellent flowing well in the town lot area later in the week but, while the officials were congratulating themselves on bringing in a 500-bbl. producer from 3,878 feet, it dropped off to 75 bbls. A hasty survey indicates that the perforations have probably sanded over and preparations are being made to clean out to bottom. The

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TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This week	Daily Average	Total Last week	Daily Average	This year to date	Same time last year
Crude oil	420,558	60,080	193,337	27,620	6,813,478	8,699,256
Fuel oil	168,895	24,129	134,539	19,220	5,349,117	4,338,103
Diesel and gas oil	.....	.....	.....	.....	1,927,501	1,969,986
Gasoline	273,689	39,098	79,878	11,411	5,741,123	4,597,703
Tops	.....	.....	.....	.....	.....	149,906
Coastwise—						
Crude oil	412,005	58,858	419,666	59,952	17,261,493	16,043,349
Fuel oil	419,697	59,957	425,110	60,730	8,224,322	7,385,308
Diesel and gas oil	21,338	3,048	22,309	3,758	275,657	146,501
Gasoline	3,152	450	427,461	61,066	6,294,606	4,918,288
Kerosene	19,206	2,744	12,500	1,786	137,475	144,370
Tops	.....	.....	.....	.....	104,595	476,912
Exports—						
Crude oil	.....	.....	57,770	8,253	1,702,503	2,867,670
Fuel oil	388,197	55,457	498,748	71,250	18,296,344	11,472,105
Diesel and gas oil	2,801	400	.....	.....	842,087	274,767
Gasoline	28,515	4,074	.....	.....	2,917,679	3,125,063
Tops	.....	.....	.....	.....	227,204	.....
Kerosene	96,164	13,738	.....	.....	1,478,994	1,923,187

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	505,608	1,164,956
Gasoline	.....	.....	80,215	11,459	1,418,705	701,990
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	.....	.....	58,190	8,313	303,016	215,617
Coastwise—						
Fuel oil	183,089	26,156	69,847	9,978	3,841,110	3,524,016
Diesel and gas oil	.....	.....	.....	.....	207,012	.....
Gasoline	166,180	23,740	71,491	10,213	3,434,731	3,213,902
Kerosene	2,500	357	.....	.....	151,972	266,464
Exports—						
Fuel oil	251,322	35,903	74,382	10,626	1,941,627	2,561,576
Gasoline	68,961	9,852	74,840	10,691	2,090,120	1,393,389
Kerosene	.....	.....	2,380	740	567,536	1,462,297
Lubricants	9,250	1,321	.....	.....	18,370	26,810

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well and Location—	S-T-R	Depth	Status
Calif. Eastern, No. 1 Cypress, Potrero	27- 3-14	5,043	suspended
Associated, No. 1 Cypress, Potrero	34- 2-14	4,450	suspended
Getty, Geo. F., No. 1 Tubbs, Rivera	25- 2-12	5,004	gr. sd. drilling
Mont. Park Oil Co., No. 1 Browning, Mont. Park	26- 1-12	1,994	sd .drilling
Circle Oil Co., No. 1 Pomeroy, Manchester	23- 3-14	4,280	suspended
Shell, No. 1 Mission, San Fernando	4- 2-15	3,691	hd. sd. drilling
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	4,870	plug back
Carr, G. P., No. 2 Foster, San Juan Capistrano	13- 8- 8	3,292	hd. sd. drilling
Thomson & McCoy, No. 1 Rimz, Saugus	27- 5-16	1,610	suspended
Southwest Pet., No. 1 Ramsauer, Watts	4- 3-13	2,930	sd. sd. drilling
San Clemente Oil Co., No. 1 Peck, Hawthorne	20- 3-14	4,022	sd. sd. drilling
Western Oil & Ref. Co., Well No. 1, Hawthorne	29- 3-14	Rig	rigging up
White Behr, No. 1 Watson, L. A. County	21- 4-14	Rig	rigging up
Shell, No. 1 Allec, Placentia	31- 3- 9	2,780	sd. sh. drilling
S andard, No. 1 Olive, Orange Co.	17- 4- 9	2,888	hd. sd. drilling
Son, C. A., No. 1 Pinkerton, Orange Co.	5- 5-11	402	sd. drilling
Standard, No. 1 Rindge, Palms	36- 1-15	Rig	in litigation
Hemet, Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	1,321	fishing
Anchor Oil Co., No. 1 Hudson, Los Angeles Co.	19- 2-10	398	sd. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1, Kettleman Hills	30-23-19	3,216	sd. sh. drilling
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,105	pipe bad
General Pet., No. 2 Oschener, Kettleman Hills	26-22-18	4,370	gr. sd. drilling
General Pet., No. 1 Dome, Kettleman Hills	4-24-19	3,012	show oil
C. C. M. O., No. 1 McGlashan, Kettleman Hills	17-24-19	4,860	gr. sd. drilling
South Coalinga, Well No. 1 Kettleman Hills	35-24-19	2,674	sd. sh. drilling
McPhail, Hugh, Well No. 1 Kettleman Hills	13-24-18	2,010	gr. sd. drilling
Superior Oil Co., Well No. 1, Kettleman Hills	26-21-17	Mtl.	building rig
Milham Explt'n., No. 1 Kettleman, Kings Co.	2-22-17	3,598	cleaning out
Shell, No. 2 Berlywood, Moorpark	32- 3-20	4,690	hd. sd. drilling
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	5,545	resume drlg.
C. C. M. O., No. 1-B Hobson, Ventura Co.	16- 3-24	4,900	resume drlg.
Pan American, No. 1 State, Ventura Co.	17- 3-24	705	land 15½-inch
Pan American, No. 1 U. S., Ventura Co.	17- 3-24	Rig	suspended
Scott Petroleum, No. 1 Surf, Ventura Co.	35- 4-24	418	sd. drilling
Continental Oil Co., No. 1 Burnham, Ventura Co.	22- 5-18	3,050	reaming
Standard, No. 1 Camarillo, Ventura Co.	29- 2-20	5,520	hd. sd. drilling
Standard, No. 1 Montalvo, Ventura Co.	17- 2-22	6,799	hd. sd. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	2,820	slight show
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	3,600	suspended
Star Petroleum, No. 1 Canet, Ventura Co.	13- 3-23	5,240	fishing
Richfield, No. 27 Piru, Ventura Co.	35- 5-18	1,902	hd. sd. drilling
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	7-29-24	4,019	clean. out
Pacific Eastern, No. 1 Bakersfield, Kern Co.	6-30-28	4,392	prod. test
General Pet., No. 1 Edison, Kern Co.	5-30-29	501	sd. drilling
Shell, No. 1 Mon Bluff, Kern Co.	3-28-28	Rig	rigging up
Kerwin & Seal, No. 1 Edison, Kern Co.	4-30-29	Rig	rigging up
Getty, George F., No. 1 Edison, Kern Co.	22-29-29	Rig	rigging up
Mays & Valencia, No. 1 Machado, Kern Co.	31-30-28	Rig	rigging up
C. C. M. O., No. 1 Quinn, Delano	23-25-27	2,281	plug back
Honolulu Consd., No. 1 Wallace, Delano	5-25-25	Mtl.	building rig
Sayers, R. H., No. 1 Poso, Kern Co.	7-26-18	Mtl.	building rig
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	721	cemented
Shell, No. 1 Cowell, San Mateo Co.	8- 6- 5	4,271	hd. sd. drilling
Shell, No. 1 Ashton Craft, San Mateo Co.	17- 6- 5	1,990	sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	6,160	hd. sd. drilling
Shell, No. 1 Ielmorini, Sonoma County	14- 5- 7	2,153	abandoning
Thomas & Hammill, Well No. 1, Alameda Co.	16- 3- 3	1,201	hd. sd. drilling
Elliott & Clarke, No. 1 Marcos, Santa Barbara Co.	34- 7-29	1,214	hd. sd. dilling
Becker, Geo. F., No. 1 Summerland, Santa Barbara	33- 4-25	3,080	sd. sh. drilling
Birch Oil Co., No. 1 Porterville, Tulare Co.	13-20-26	1,106	bl. sh. drilling

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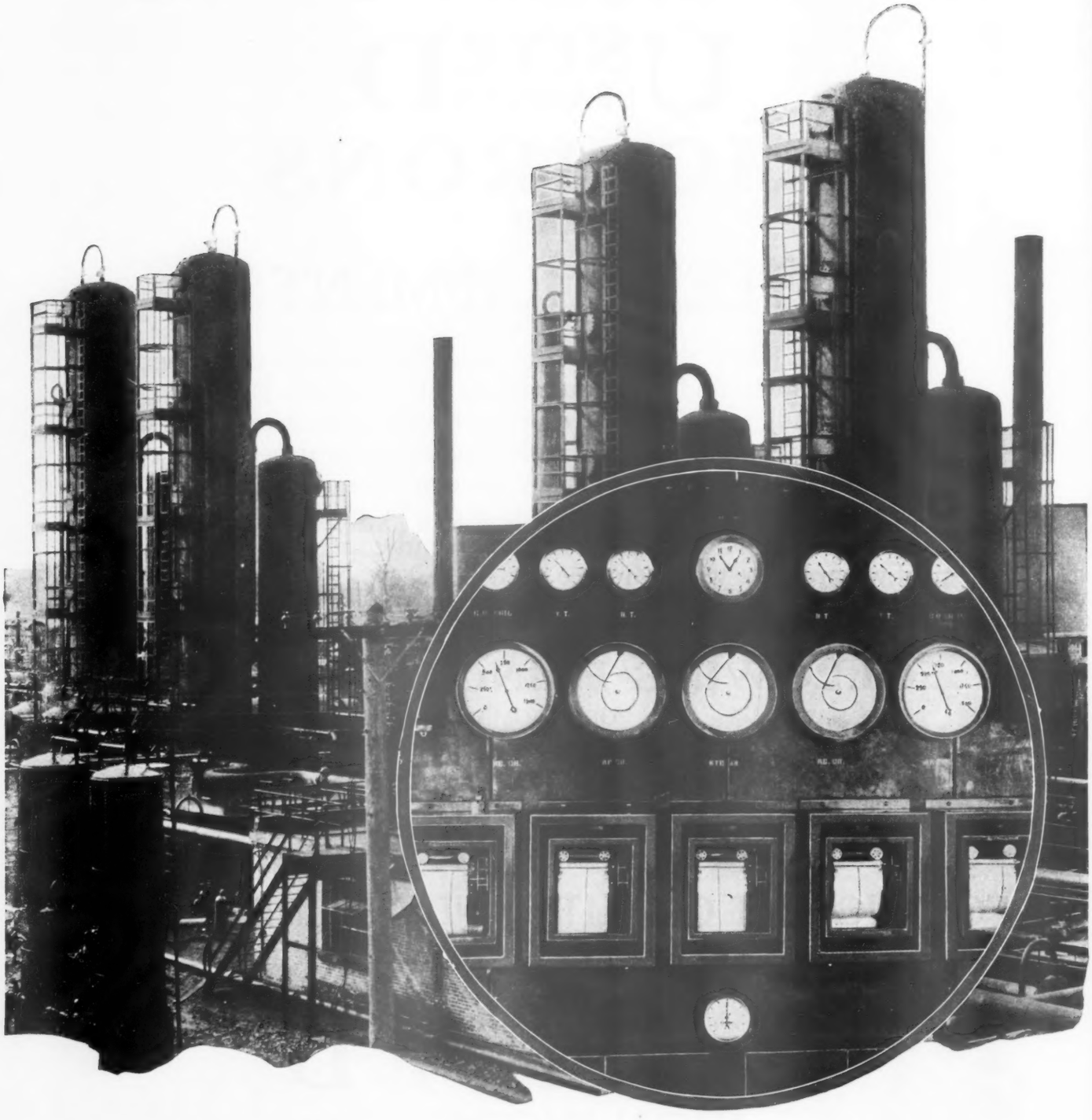

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*Page 69, February, 1927, issue of The Refiner and Natural Gasoline Manufacturer.

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Temperature Control

Reclaiming Many Old Eastern Wells

Drilling Them Deeper Proving Profitable in Wood and Ritchie Counties. Clay County Comeback

By D. F. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Sept. 5.—August shows the wells completed in West Virginia and southeast Ohio were of a better average size than those completed in July and the new production much higher. July established a record for the small amount of new production brought to the surface. The time is fast drawing to a close when operators can hope to increase their production for the winter.

There is almost as much effort making to reclaim old wells by drilling them deeper as starting new work. After rebuilding a rig and cleaning out, the cost to drill to the lower production formations is comparatively light. In some localities it has proven profitable. This is true of Wood, Ritchie and other counties where there is more than one producing sand at a depth greater than when the well was originally completed.

Best Completions for Week

Only a few good wells were completed during the week and as usual, southeast Ohio had the best, located in the deep sand territory. The deep sand territory shows a greater decline in operations than any other section. For active operations, Guernsey County still holds first place in southeast Ohio.

In Lot 29, Hardy Township, Holmes County, the East Ohio Gas Co. completed and shot in the Clinton sand No. 5 on the Harvey Bell farm. It produced 150 bbls. the ensuing 24 hours. In the southwest quarter of Section 1, Washington Township, Hocking County, the Preston Oil Co. completed and shot in the same formation a second test on the Cynthia A. Marks farm. It produced 115 bbls. the first 24 hours. In the southwest quarter of the same township, the Gordon Oil Co. got a dry hole in the Clinton sand on the T. J. Trobridge farm.

The West Virginia fields had two wells better than the average. The Big Injun sand pool in Henry district, Clay County, after a long run of light pumpers, came to the front with a fair producer. It is the South Penn Oil Co.'s No. 3 on the James Phillips farm good for 50 bbls. a day. It has been three months since Clay County has had a producer as good as this. It is located in defined territory.

In Harvey district, Mingo County, the Old Colony Oil & Gas Co. completed in the Maxon sand No. 6 on the Henry Closterman estate. They are recovering 23 bbls. a day by swabbing. The same company has completed in the same formation No. 7 on the Logan Cannel Coal Co.'s property. It is a gasser in the Maxon sand good for 1,000,000 feet. The production in Mingo County is increasing and promises to become somewhat of a factor. The Old Colony Oil & Gas Co. is the leading operating company in the county.

In the northwest quarter of Section 19, Green Township, Hocking County, the Preston Oil Co. has completed and shot in the Clinton sand No. 9 on the Eliza J. Price farm. It produced 85 bbls. the first 24 hours. The Arkansas Fuel Oil Co. completed its second test on the C. F. Mizer farm, in the southeast quarter of Section 2, Fallsbury Township, Licking County. It produced 12 bbls. the first 24 hours after shot in Berea grit.

In the southeast quarter of Section 2, Fallsbury Township, Licking County, Sterl C. Brown has completed in the Brea grit No. 4 on the F. E. Baughman farm, good for 12 bbls. a day. In the southwest quarter of Section 21, Salt Lick Township, Perry County, the Big Ten Oil & Gas Co. has a 10-bbl. pumper in the Clinton sand at No. 5 on the Hazleton heirs' farm.

West Virginia

In Geary district, Roane County, Noble Beattie has completed a test on the Igo heirs' farm for a 500,000-foot gasser in the Big Injun sand. The location is 4,000 feet west of the company's second test on the Fred Smith farm.

In Otter district, Braxton County, H. C. Zogg & Co. drilled deeper its old test on the Henry Belknap farm and it is a gasser. In Geary district, Roane County, the King Oil & Gas Co.'s test on the John Boothe farm is a gasser in the Big Injun sand. In the same district, the United Carbon Co.'s test on the A. L. Wright farm is a light gasser in the same formation.

Fair Producer in Wetzel County

In Church district, Wetzel County, the Delmar Oil Co. has drilled in a second test on the Anna Palmer farm. The well has not been put to pumping, but is swabbing 50 bbls. a day. This is much larger than the late average size in Wetzel County.

In Ellsworth district, Tyler County, G. E. McCutcheon completed in the Maxon sand a second test on the J. P. Twyman farm, good for not more than 3 bbls. a day. In Ten Mile district, Harrison County, the Carlton Oil & Gas Co.'s second test on the J. W. Herbert farm is a light gasser in the fifth sand.

In Courthouse district, Lewis County, W. M. Smith and others have a light gas well in the Gantz sand on the M. E. Whelan farm, at a total depth of 2,755 feet. In Meade district, Upshur County, Osborne & Cavender have a light gasser in the Gordon stray sand at a test on the O. W. Hefner farm.

In New Milton district, Doddridge County, the Manufacturers Light & Heat Co. has drilled its test on the Henry Ahouse farm to a total depth of 3,868 feet. It is a duster in all sands, and has been abandoned. In Mannington district, Marion County, the Clifton Oil & Gas Co. had the same luck when it drilled a second test on the Belle Snyder farm to a total depth of 3,423 feet.

Calhoun County

The Hope Natural Gas Co.'s test on the A. Hardman farm, in Center district, Calhoun County, is a gasser in the Big Injun sand. In Lee district, the Hope Construction & Refining Co. has a duster at a test on the Julia P. Cross farm. In the same district, Kingsbury & Dollman's test on the L. L. Lynch farm is good for not more than 1 bbl. a day. In the same district, McIntosh & Co. have a gasser in the Big Injun sand at a test on the W. H. Slider farm. In Sheridan district, the Euclid Oil & Gas Co. has a 4-bbl. pumper at a test on the Lon Powell farm. In Sheridan district, W. H. Bickel has a gasser in the Big Injun sand on the Robert A. Ferrell farm. In Harper district, Roane County, Simms & Co.'s test on the S. M. Curry farm is dry in the Big Injun sand and has been abandoned.

On the waters of Leading Creek, near Beacon Church, Murphy district, Ritchie County, Joshua Haught and others completed a test on the Joshua Haught farm good for 2 bbls. a day in the salt sand.

On Grass Run, DeKalb district, Gilmer County, the Philadelphia Gas Co. completed No. 6 on the D. Stalnaker farm. It is a duster in the Big Injun sand.

Clay County

For two or three months the Big Injun sand development in Henry district, Clay County, has been completing nothing better than light pumpers, but has again come to the front with a fair producer, the South Penn Oil Co.'s No. 3 on the James Phillips farm. It is good for 50 bbls. a day and is 500 feet northeast of No. 2 on the same farm. In the same district, the Virginian Gasoline & Oil Co. completed in the same formation No. 14 on the Lockhart tract. It is located 600 feet east of No. 13 and good for 15 bbls. a day.

On the right hand fork of Breden Creek of Twelve Pole Creek, Harvey district, Mingo County, the Public Gas Corp. has drilled deeper into the Maxon sand No. 6 on the Henry Closterman estate and it is good for 20 bbls. a day. East of Flat Fork station, Harper district, Roane County, the John Hamilton Oil Co.'s test on the S. M. Curry farm is a duster in the Big Injun sand.

In Grant district, Ritchie County, S. C. Burkwell & Co.'s test on the Abraham Everett farm is a 2-bbl. pumper in the Squaw sand. In the same district, Charles Ingram & Co.'s test on the J. K. Burge heirs' farm is a gasser in the Big Injun sand.

In Central district, Doddridge County, C. R. Pigott's No. 6 on the J. S. Nester farm is good for 15 bbls. a day in the Maxon sand. In Collins Settlement district, Lewis County, the Mud Lick Oil Co.'s No. 3 on the E. G. Davidson farm is a 10-bbl. pumper in the Gordon sand.

Nine miles west of Pine Grove, old territory, Magnolia district, Wetzel County, Rawe Brothers have drilled their test on the Frank Leasure farm through the Big Injun sand and is dry. In Clay district, Ritchie County, the Victory Oil Co.'s test, on the Strickler heirs' farm, is a duster in the same formation.

In Carroll district, Lincoln County, L. R. Strickland has completed No. 21 on the J. F. Hinkle farm. It is a gasser in the Berea grit. In Grant district, Cabell County, the Monickel Gas Co.'s test, on the H. B. Roberts farm, is a gasser in the Big Injun sand.

Gasser in Boone County

The Cambridge Gas Co. has completed in the Big Injun sand a test on the Abram Burlew farm, in Scott district, Boone County. It is a gasser. In Jefferson district, Lincoln County, the David Gas Co. has a gasser in the Big Injun sand at a test on the David Miller farm.

In Geary district, Roane County, the Morley Oil & Gas Co. is rigging up on the Sergent school house lot. In the same district, the United Fuel Gas Co. has started to drill on the N. M. Parsons & Co.'s farm. In New Milton district, Doddridge County, the Manufacturers Light & Heat Co. has started to drill on the G. W. and A. Farr farm. In Ten Mile district, Harrison County, the Clarksburg Light & Heat Co. is building a rig on the Mary E. Bramer farm. In the Big Creek Field, Kanawha County, the Ohio Fuel Oil Co. has cleaned out and shot its No. 23, on the W. C. Morris farm, increasing its production to 12 bbls.

Drilling and Starting Tests

On Wingers run, Murphy district, Ritchie County, S. M. Whan is drilling his test on the S. M. Scott farm. On Maberry run, same district, the Daniel O'Day estate and others are drilling a test on the Boggess heirs' farm. On King Knob run, same district, the South Penn Oil Co. is drilling to the lower sands a second test on the B. B. Nester farm.

In Battelle district, Monongalia County, the Clovis Oil & Gas Co. has made a location on the Frederick Hennan farm. The same company has started to drill on the Elijah Clovis farm. In Union district, Wood County, Rothwell

(Continued on Page 112)

FIVE COMPLETIONS AT SAGINAW; WILDCAT IN MIDLAND COUNTY

By Whit
Staff Correspondent, Michigan Fields

SAGINAW, Mich., Sept. 3.—Five completions are reported from the Saginaw Field since the last report and several others are due for completions during the next week or so. Few new wells are starting up at this time and as the Saginaw Prospecting Co. announces it will stand pat on its present producers and the four additional now nearing sand, at least several strings of tools will be hung up or drilling for other concerns.

The Saginaw Prospecting Co.'s No. 2 on the Christ Winters farm, east of Hermansau Road and north of the Shattuck Road, is reported showing for 15 bbls. Berea sand was topped at 1,822 feet and drilled 22 feet in and shot with 80 quarts. Same company's No. 6, on the Northmoor Subdivision, struck sand at 1,824 feet and went 18 feet in the sand and with an 80-quart shot is reported at 20 bbls. initial. Same company's No. 4, on the Eddy estate, on the west bank of the Saginaw River, north of Genesee Avenue, got the sand at 1,807 feet and went 18 feet in and shot with 80 quarts, getting an initial producer of 20 bbls.

Levishon & Allington's No. 1, on the Sutton Sales Co. property, in the northwest corner of Genesee Avenue and Water Street, on the east bank of the river, is reported showing around 20 bbls. or better, with sand topped at 1,810 feet and drilled 19 feet in the sand and shot with 80 quarts.

The Ohio Fuel Corp.'s No. 5, on the Fisher farm, in the northwestern part of the pool, east of the Bay Road and north of the Shattuck Road, found top of sand at 1,832 feet and drilled 16 feet in, shooting with 50 quarts, is said to show for around 7 bbls. under pump.

Field Notes

The test of W. E. Ellis and others on the Edward Kobs farm, 1½ miles south of Frankenmuth, in Birch Run Township, Saginaw County, and southeast of Saginaw, topped the Dundee sand at 2,670 feet and has so far drilled 75 feet into that formation without a showing of oil.

J. W. Fordney is starting a well on the southwest corner of Cronk and Durand Streets, Crowley & Carr doing the contract work.

The Pure Oil Co. has started drilling its wildcat well on the J. B. Raynor farm, in Section 18, Greendale Township, Midland County, to the northwest 20 or more miles from the Saginaw Field.

Saginaw Prospecting Co. is reported in the sand at its second well on the John Palvas property on the Shattuck Road. Another of its wells being No. 1 on the Boehner property, north of the Shattuck Road and between Barnard and Bay Roads, is due for completion.

Superior Oil Co. is due to complete No. 5, on the Spatz property, in the northeast corner of Reed and Barnett Streets. Another one due in is the Haggle Lease Co.'s No. 1, on the Hugel property on the Shattuck Road, west of Bay Road.

Sun Oil Co.'s No. 4 Louis Voight farm, Section 10, Saginaw Township, and No. 3 on the Pere Marquette right of way are both due to reach sand within a few days.

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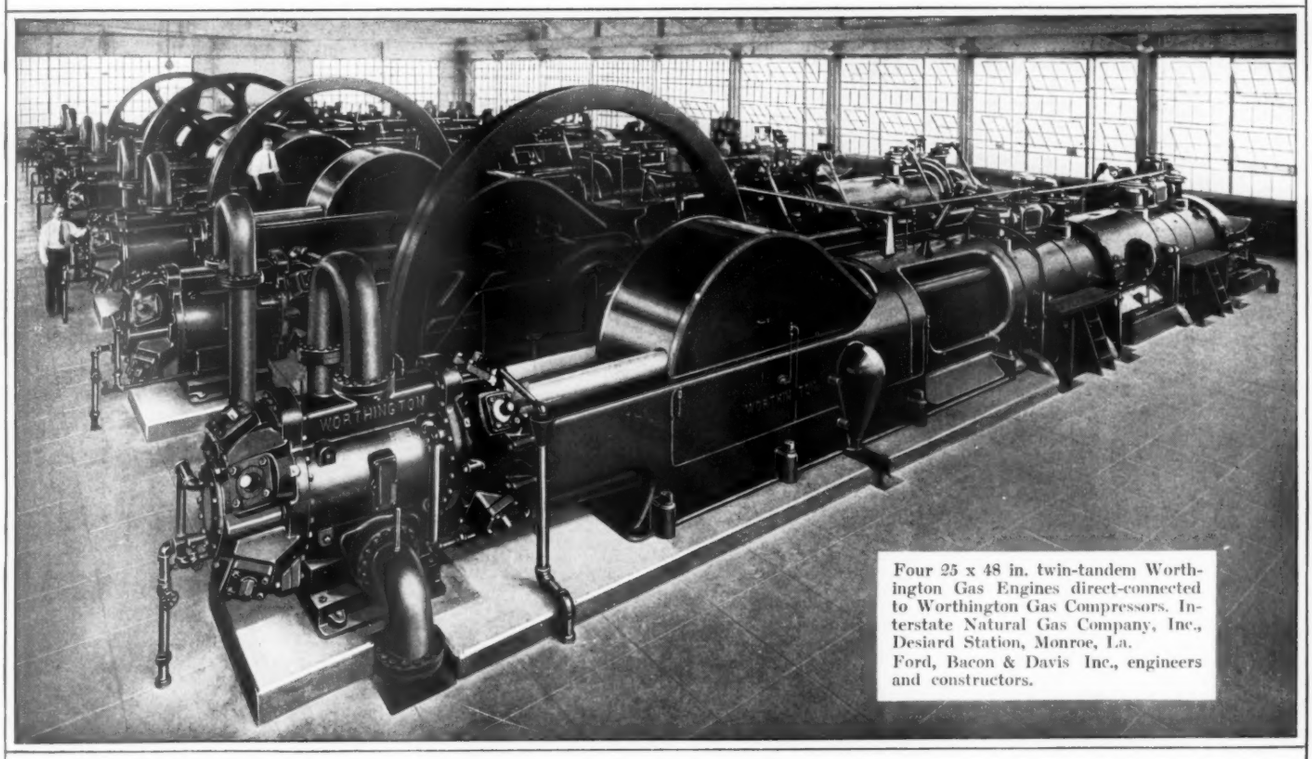

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Auglaize County Find Important

Practically New Territory Southeast of St. Marys Field. Clark County, Illinois, Being Watched

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Sept. 3.—The closing week of development in the Central West Field for August failed to show any feature of more than minor importance, and the completions for the period numbered 24, of which 4 were dry holes and 11 gas wells, leaving 9 producers with only an initial output of 196 bbls., covering the four divisions of Lima Field, Central Ohio, Indiana and Illinois. The Central Ohio Field completed one-half the number of wells, but there were only two oil wells listed in the field, with a combined production of 28 bbls., something unusual for that area, the other 10 being gas wells with no dry holes recorded. There were 33 old wells pulled out and abandoned in the Lima Field and 6 in the Indiana Field.

Lima Field

The most important find in the old Lima Field of northwestern Ohio for the week was the test of the Real Oil Co., formerly reported E. C. Huenke and others, 800 feet from the south line and 250 from the west line of the Ben Wierville farm, in the northeast quarter of Section 29, Washington Township, Auglaize County, about 3 miles south and 4 miles east of St. Marys, close to 1 mile east of Knoxville, and 7 miles south and a little east of Glynwood. It topped the Trenton sand at 1,182 feet and at 52 feet in the sand pumped 35 bbls. the first 24 hours. This is practically new territory, being south of the Glynwood Field and southeast of the St. Marys Field. Before this well was drilled in, several tests were made on the F. H. Kuckerman farm, in the southeast quarter of the same section and south of the Wierville producer. Nos. 5 and 6 on the Kuckerman farm, drilled in during the closing part of August, showed initial production of 45 bbls. each, and were drilled by the Brookside Oil & Gas Co., making that area look as promising for good production as in any other portion of the Trenton Rock area. No. 1 is drilling on the Kuckerman farm, and No. 2 will be started at once on the Ben Wierville farm, and there is a well being drilled on the F. Wierville farm, in the northeast quarter of Section 9, same township, 2 miles north and about a mile east of the producer on the Ben Wierville farm, making intervening territory between the Brookside company's wells on the Kuckerman farm, and the lines of the development toward Glynwood, of the field of the early nineties, look more encouraging for production than ever before. In Salem Township, same county, the Bachelor Oil Co. is drilling No. 13 on the William T. Seibert farm, Section 3, about 6 miles north of St. Marys, and about 2 miles southwest of Kossuth.

In Allen County, in the northeast part of Bath Township, C. A. Peavey is drilling No. 4 on the C. M. Lenney farm, Section 1. Keck Oil Co. is drilling No. 1 on the John M. Miller farm, Section 11, same township; O. T. Botkins and others are drilling a test on the William B. Hall farm, Section 13; and W. W. Botz and others are working at a test on the Charles E. Landis farm, Section 14, all near the northeast corner of Bath Township.

In Center Township, Mercer County, W. B. Lawrence and others' No. 4 well, 1,420 feet from the north line and 360 from the west line of the Dayton Fast farm, in the northwest quarter of Section 9, showed an initial pumping of 23 bbls. Sand was found at 1,130 feet and oil at 42 feet in the sand. In Liberty Township, the Celina Petroleum Co. is drilling No. 6 on the Brehm Brothers farm, Section 9.

In Rice Township, Sandusky County, Milton J. Beaty's No. 13 well, 600 feet from the north line and 200 from the east line of the Lenhard Schneider farm, in the northeast quarter of Section 5, pumped 3 bbls., with sand topped at 1,459 feet and drilled to a total depth of 1,404 feet, or 45 feet in the sand.

In Liberty Township, Seneca County, near the town of Gomer, north of Tiffin, John Whitmore and others went 150 feet in the Trenton at No. 1 on the Dayton Connor farm, Section 21, without getting a showing of oil. So far, 10 wells have been drilled in this area and only one was a paying well, which was the initial venture made by Murphy & Son some months ago.

Abandoned Wells

In Allen County, Bath Township, C. A. Peavey pulled out and abandoned Nos. 1, 2, 3, 4, 11 and 14 on the Elias Lewis farm, Section 1. In Spencer Township, the Ohio Oil Co. pulled out Nos. 1, 2, 3, 4, 5 and 6 on the William Davis farm, Section 1. William Lang abandoned No. 5 on the Joseph Ford farm, Section 2, Marion Township. In Shawnee Township, Willis Huffer pulled Nos. 1 and 8 on the William Hixenbaugh farm, Section 3. In American Township, the Lima Trust Co. abandoned No. 3 on the Anthony Miller farm, and in Sugar Creek Township, Jacobs & Hasson pulled out No. 9 on the E. H. Irvine farm, Section 3, all in Allen County.

In Mercer County, Butler Township, the Recovery Oil & Gas Co. abandoned Nos. 2, 3 and 4 on the Clem Ebbing farm, Section 31. In Union Township, the Ohio Oil Co. did the same with No. 5 on the Scott Hays farm, Section 13, and No. 1 on the W. J. McMichael farm, same section. In Black Creek Township, same company abandoned No. 1 on the A. Evens farm, Section 18, and Nos. 1, 2, 3 and 4 on the Celia Kuhn farm, Section 20.

In Jennings Township, Van Wert County, Geselchen & Reynolds abandoned Nos . 1 and 2 Martha Jones farm, Section 31. E. A. Kuhns and others did the same with Nos. 1 and 2 T. J. Hennon farm, Section 30, and J. H. Reynolds and others pulled No. 1 on the Phil Louth farm, Section 5.

Indiana

Few completions are reported from Indiana since the last report. The best well was in the old Trenton Rock area of the eastern central portion of the State in Bear Creek Township, Jay County, where a test by Paul G. Gombert on the James Myers farm, Section 16, pumped 40 bbls. initial. In the same township, Isaac Tullis drilled a test on his own farm, Section 14, getting a 2-bbl. initial pumper. In Penn Township, same county, the Amber Oil & Producing Co. is drilling No. 11 on the J. M. Sutton farm.

In Blue Creek Township, Adams County, the Paul Schulte Oil & Gas Co. is drilling or rigging up at No. 4 on the Edward Lugabill farm, Section 20.

In Center Township, Gibson County, Mann, Huber and Young's test in the southwest corner of the Rose McElhiney farm, in the southeast quarter of Section 13, struck a well showing a volume of 1,000,0000 feet of gas. Sand was topped at 524 feet and drilled only 6 feet in the sand when the gas came with a roar. Gray and others are drilling No. 6 on the John Wirtz farm, same section. Peoples Petroleum Co. is drilling No. 1 on the M. Eisler farm, same section, and J. D. Griggs and others are working at a test on the Frank Watkins farm, Section 14, same township. In Washington Township, H. C. Darby and others' test in the southeast corner of the George Heuring farm, in the northeast quarter of Section 33, same township, was a duster at a depth of 1,385 feet. The Ohio Oil Co. has a rig in for No. 3 on the Dora Edwards farm, Section 11, same township.

In Monroe Township, Pike County, the Murphy Oil Co. abandoned No. 7 in the northeast corner of the Fred A. Butler farm, Section 23, as it got too light to pump. In Niles Township, Delaware County, W. S. Estill abandoned Nos. 1, 2, 3, 4 and 5 J. M. Bran farm, Section 28.

Illinois

One of the important test wells under way in Illinois is on the E. A. Alexander farm, in Section 9, Melrose Township, Clark County, 2 miles west of the hamlet of Melrose, 4 miles south and 13 miles east of Casey, about 6 miles south and 7 miles east of Martinsville, and about 8 miles east of the Moriah Field, along the border of Johnson and Orange Townships, same county. This test is approximately 3 miles south and 7 miles east of the productive pool in Section 30, Martinsville Township, which is really the closest production to the wildcat venture. In the pool in Section 30, Martinsville Township, oil was found in a stray sand at around 1,450 feet and later on the Niagara lime formation at from 1,500 to 1,600 feet proved quite productive, and still lower down, at from 2,400 to 2,600 feet, production was found in the Trenton rock.

The test on the Alexander farm is being drilled by the Arkansas Oil Co., according to reports, and at a depth said to be around 2,600 feet a nice showing of oil was found, but not in quantities to please the owner, who is going deeper. The well failed to find any increase in the showing found in the Niagara lime and it is now going down to test the value of the Trenton rock. There is a heavy dip to the southwest of the rich Martinsville Pool where Niagara formation was found at around 1,600 feet and which means that the Alexander well went to a greater depth of 1,000 feet to find this sand. The next formation below the Niagara should be the Clinton lime, if that formation exists there; then comes the Trenton rock, which is or has been such a heavy producer of oil in northwestern Ohio and eastern Indiana. The test is being watched with much interest by the trade in general, for the finding of good production in the Trenton will mean a rejuvenation of the Illinois Field.

Allendale Field

Only four completions were reported from Illinois. In the Allendale Field in Wabash Township, Wabash County, the Breen Oil Co.'s No. 1 in the southeast corner of the L. G. Stillwell farm, in the northeast quarter of Section 2, struck top of sand at 1,375 feet and at 15 feet in the well produced 50 bbls. the first 24 hours. C. E. Bothwell's No. 4 well, 750 feet from the south line and 1,200 from the east line of the Jesse Cisil farm, in the southeast quarter of the same section, pumped 15 bbls. initial. Sand was topped at 2,204 feet and drilled 4

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AMBROSE POOL HIT BY DUSTERS; LEASING MORE ACTIVE IN KENTUCKY

By Whit
Staff Correspondent, Kentucky-Tennessee

HARTFORD, Ky., Sept. 5.—The only noise of interest in the Kentucky-Tennessee fields during the week was centered in Ohio County, in the western division. Some parts of the county were hard hit by dusters where good producers were looked for. Just to the west of the richest part of the Ambrose Pool three dusters were reported on one farm that has shown excellent production, still there is production a little farther west, meaning a dry streak passing through the territory, which is characteristic of Kentucky since development work first started in the state.

Few wells are being brought in at this time and there is a lull in operations, although leasing is more active than for many months. Large blocks of acreage is being taken up not alone in Ohio and Daviess Counties, but in Butler, Muhlenburg, McLean and other counties adjoining and mostly by the large operating concerns. Leasing prices are mounting and are hard to get on long drilling contracts. Farmers appear to want to know right off the gun whether they are to enjoy the fruits of the royalties or not, or whether oil exists below their homesteads. Among some of the late entrants into the Tri-County Field, but mostly in Ohio and Daviess Counties are the Gulf Refining Co., Mid-West Oil Co.; Ben Hardin of the New Domain Oil & Gas Co., W. E. Hupp of Hupp, Duff and others of Lexington, Frank Pringle, of Bradford, Pa., and many others that are old-time operators or companies. Royalty interests are also being gobbled up in some areas. It is stated that Ollie Ezell sold his royalty interest on his 130-acre farm, for a consideration of $11,000. One well has been drilled on this farm which lies to the west of the rich Ambrose Pool, and was drilled by Daily & Lowman of Cleveland, Ohio, and was reported making a very good showing and at the same time opens up a new area for development work.

Week's Work

A summary of the week's work in the Kentucky Field shows 10 completions, 4 producers with an initial of 130 bbls., 5 dry holes and 1 gas well. Compared with the previous week, there were 28 less completions, 17 less producers, 932 bbls. less production and 11 more dry holes. The wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Ohio	7	2	40	4	1
Daviess	1	1	70	0	0
Barren	1	1	20	0	0
Owsley	1	0	0	1	0
Total Kentucky	10	4	130	5	1
Last week	38	21	1,062	16	1
Difference	28	17	932	11	0

Western Kentucky

The best well reported from the western division of Kentucky for the week was found on the John M. Miles farm, in the Roby Pool, of Daviess County, to the southwest of Pellville, with an initial production of 70 bbls. In Ohio County, a wildcat on the Ollie Ezell farm, west of the Ambrose Pool, is reported to be a 30-bbl. producer, while conflicting reports put it as high as 200 bbls. initial. Three dry holes right up close to production in the Ambrose Pool have set the trade to thinking that there are many dry streaks between good production and it is hard telling which way the rich pool will extend and how far in each direction. As the pool stands today, it is one of the rich spots of the Tri-County Field. There

(Continued on Page 70)

MEN KNOWN IN OILDOM

James A. Veasey

James A. Veasey, chief counsel for the Carter Oil Company, of Tulsa, Okla., was born at New Albany, Ind., 54 years ago. He obtained a knowledge of finance and banking when, as a young man, he was employed by the Bank of Commerce of Louisville, Ky., just across the line from the town of his birth.

After completing his preliminary education, he entered the University of Michigan, from which he was graduated in law. Feeling the urge of the great southwest, he went to Muskogee, Okla., and entered the service of the Dawes Commission, which at that time was in charge of the Oklahoma Indian affairs.

After some time with the commission, he removed to Tahlequah, Okla., and engaged in the practice of law. He later moved to Bartlesville, when that city experienced its first big oil excitement. In 1913 he formed the law firm of Veasey & Roland, of Bartlesville, and in 1915 he moved to Tulsa and became a member of the law firm of Sherman, Veasey & O'Meara.

In 1915, he became counsel for the Carter Oil Company and has remained in that capacity since. He is an authority on oil and gas law.

PERSONAL PARAGRAPHS

Dr. C. K. Francis is attended the meetings of the American Chemical Society at Detroit, Mich., this week.

* * *

R. A. Fouts, president of the Deepwater Oil Refineries, Inc., Houston, Tex., is in the North on a vacation trip.

* * *

M. R. Williams, secretary of the Big Lake Oil Company, Texon, Tex., is spending his vacation in St. Louis, Mo.

* * *

Harry L. Pew, Lima, Ohio, superintendent of production of the Buckeye Fields, visited Pittsburgh, Pa., last week.

* * *

D. E. Buchanan, vice president of Chestnut & Smith Corporation, has returned from an extended tour of Europe.

* * *

J. T. Stover, who recently underwent an operation for appendicitis, is improving nicely and is able to be around again.

* * *

Homer T. Freed, San Angelo, Tex., operator, has returned to his home following a month's visit in Green Bay, Wis.

J. J. Conry, general superintendent of the Carter Oil Company, of Tulsa, Okla., is spending his vacation in Michigan.

* * *

T. L. Coplin, of the Texas Railroad Commission and headquartered in Wichita Falls, Tex., has returned from a vacation.

* * *

W. G. Gray, district manager of the Republic Supply Company at Shreveport, La., has been in the East on a 10-day visit.

* * *

L. L. Marcelle, of Kansas City, Mo., president of the White Eagle Oil & Refining Company, has been spending a few days in Tulsa, Okla.

* * *

J. E. Flanagan, head of The Texas Company's land department, in Oklahoma and Kansas, has made a trip over the Kansas fields.

* * *

George Golden of the Victory Petroleum Company, Wichita Falls, Tex., has returned to his offices following a two-month vacation in Europe.

* * *

A. J. Smith, geologist, formerly with the Humphreys Corporation at Houston, Tex., is now with the Pure Oil Company at Amarillo, Tex.

* * *

Lee Huntington, superintendent of the gasoline plants of the Skelly Oil Company in the Texas Panhandle, has been in Tulsa, Okla., on business.

* * *

L. M. Deutsch, representative of the Wilson Oil Tools Corporation of Wichita Falls, Tex., has been in Shreveport, La., on a short business trip.

* * *

H. B. Rheuark, president of the Shreveport Chemical Company of Shreveport, La., has been making a summer trip with his family through Wisconsin.

* * *

A. L. Stewart, of the Hinderliter Tool Company, Tulsa, Okla., has returned home following a vacation visit with friends and relatives in Shreveport, La.

* * *

Nelson K. Moody, president of the Prairie Oil & Gas Company, with a party of Prairie company officials, were recent visitors in the Panhandle of Texas.

* * *

Ph. E. Harth, of the research department of the National Pigments & Chemical Company, is in New York. He expects to leave shortly for the Pacific Coast.

* * *

B. F. Fisher, of Shreveport, La., superintendent of trunk lines of the Standard Pipe Line Company, has returned to his work following a vacation spent in Arkansas.

* * *

Harry L. Nolan, sales manager of the Continental Supply Company, of St. Louis, Mo., is spending his vacation at his former home, Bradford, Pa., and at Lockport, N. Y.

* * *

Charles I. O'Neill, secretary of the Okmulgee District Oil and Gas Association, of Okmulgee, Okla., has returned from a vacation spent in motoring the eastern states and Canada.

* * *

A. W. Watkins, for the past two years with the Carl B. King Drilling Company, has become a member of Hayner, Reaves & Company of Tulsa, Okla., with which he was formerly connected for four years.

* * *

A. E. C. Birdwell has been appointed field representative of the Republic Supply Company, working out of Shreveport, La. This is a promotion, as Mr. Birdwell has been in the employ of that company for some time.

* * *

W. C. Bean, for the past four years head of the Roxana Petroleum Corporation's geological department in the Wichita Falls, Tex., district, has been transferred to Ardmore, Okla., where he will take over the southern Oklahoma department in connection with the Texas areas.

A. D. Hunter, of Tyler, Tex., scout for the Humble Oil & Refining Company in East Texas, has returned from a two-week vacation spent in Shreveport, La., and Stephens, Ark.

* * *

J. E. Fitzpatrick, vice president of the Deep Rock Oil Company, Fort Worth, Tex., has returned to his offices after a business trip of several days' duration in the Panhandle.

* * *

Warren A. Sinsheimer, Harry D. Frueauff and W. H. Merrit, general manager of the Cities Service Oil Company (Delaware), were business visitors at Bartlesville, Okla., recently.

* * *

W. N. O'Roark, of Shreveport, La., scout for the Standard Oil Company of Louisiana and president of the National Oil Scouts' Association, has returned from a two-week vacation.

* * *

Paul Reid, formerly assistant purchasing agent for the Houston Oil Company, Houston, Tex., is now the South Texas representative of the Texas Steel Company of Fort Worth, Tex.

* * *

President E. A. Durham, of the Trico Organization, and Mrs. Durham, have returned to Sistersville, W. Va., from an extended trip to the British Isles, including a motoring tour of Scotland.

* * *

C. L. Coppage, vice president and director of sales of California Petroleum Corporation, with Mrs. Coppage, has returned to Los Angeles after a five-month journey, which took him to South America and Europe.

* * *

L. M. Kiplinger has returned to Casper, Wyo., after a short business trip to the offices of the Ohio Oil Company at Findlay, Ohio. Mr. Kiplinger is cashier of the Ohio Oil Company's Rocky Mountain division.

* * *

W. L. Connelly and wife, of Casper, Wyo., A. E. Watts and family, of New York City, and John R. Manion and wife, of Tulsa, Okla., have been spending a few days at the Horton ranch, near Buffalo, Wyo.

* * *

James Webb, for some time chemist at the Imperial Oil, Ltd., plant at Sarnia, Ontario, and formerly of Petrolia, Ontario, left recently for Peru, where he will be employed with the International Petroleum Company.

* * *

Walter M. Dunham, who makes his headquarters in Tulsa, Okla., but who is known wherever oil is produced, is in Houston, Tex. Mr. Dunham says he has just returned from a survey of the Central and South American fields and prospective fields.

* * *

Joe Wilson, district superintendent of the gasoline division of the Empire company, and Alex Crowell, assistant superintendent of the Sallyards plant, are on a motor trip to the Carolinas. Wilson will go to his old home in Abbeville, S. C., and Crowell will renew boyhood acquaintances in Monroe, N. C.

* * *

Ira Laughlin, scout and land man for the Roxana Petroleum Corporation in the Texas Panhandle, has been visiting friends and relatives in Shreveport, La. Before going to Amarillo, his present headquarters, Mr. Laughlin was with the Louisiana Oil Refining Corporation at Shreveport.

* * *

John T. Prevo, of the land department of the Mid-Kansas Oil & Gas Company at San Angelo, Tex., accompanied by T. W. Haught, district production superintendent of the company, from Eliasville, were in San Antonio, Tex., recently to make locations and get started two tests in the Adams Gas Field, in Medina County.

* * *

L. L. (Len) Walker, district superintendent for the Caribbean Petroleum Company for the Bolivar district of Venezuela, is in the Mid-Town Hospital, in New York City, where he is recovering from a major operation. Mr. Walker's family is with him and will accompany him to California as soon as he is able to travel. He expects to go back to Maracaibo in November to resume his duties.

"OILWELL" SPEED SUCKER ROD ELEVATORS

Designed after a careful study of methods employed in the use of sucker rod elevators as well as the duties which they must fulfill, **"OILWELL"** Speed Sucker Rod Elevators have the following superior features:—

The body is made in one piece, eliminating the use of plates held in place by screws which frequently cause trouble.

The body is made of heat treated steel and hardened which results in practically no wear in the slot carrying the sucker rods, even after years of service.

The body is reversible.

There is no toggle or hinge j[illegible]ted mechanism.

Bail supports are made a p[illegible] of the body.

The locking pin is of the plunger type and is self-cleaning, insuring perfect operation. Sand or paraffine will not clog it.

The operating handle is protected and can not catch on anything in the derrick.

The operating handle is sufficiently large to permit the operator when wearing gloves to insert fingers to unlock the elevator. There is no complicated locking mechanism to be tripped.

The elevator is balanced which insures quick and safe operation.

Maximum strength with minimum weight is due to construction with the shortest possible distance between trunnions.

Simple in design—Strong in construction
Efficient in operation

Patent Pending

Inquire at Any of Our 100 Branches

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON
WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Natural Gas Developments

AMALGAMATION SEEN AS MARKED STEP FORWARD

In reference to the amalgamation of the Natural Gas Association of America with the American Gas Association, completed August 1, in accordance with the resolutions passed in May at the Cincinnati convention of the Natural Gas Association of America, Chairman N. C. McGowen, of the Natural Gas Department of the American Gas Association, feels the amalgamation is a marked step forward, and urges natural gas men to put forth their best efforts to make their department a success. He says he is quite sure they can get considerably more out of their association work under the amalgamation than was possible under a separate organization.

The Natural Gas Department will hold a department convention next spring, covering the same ground as the former annual conventions; the Southwest Division of the department will hold its divisional meetings. The committees are now working on arrangements for these meetings.

In accordance with the agreements of the amalgamation, all of the members of the Natural Gas Association of America in good standing on August 1, 1927, automatically became members of the American Gas Association.

WORK ON WASKOM LINE TO HOUSTON STARTED

SHREVEPORT, La., Sept. 3.—Eight carloads of 22-inch pipe were being unloaded the first of the week and four full crews of the Home Engineering & Construction Co. started work at the same time on laying of the trunk gas line for the Dixie Pipe Line Co. from Waskom, East Texas, to Houston and Port Arthur, Tex.

Four specially built ditching machines are on the job and approximately 3 miles of pipe will be laid daily. The line is being built from the Waskom end, working toward Livingston, Tex., where the line will branch into two 18-inch sections, one going to Houston and the other to Port Arthur.

Ground also is being broken at Waskom for the first of two $500,000 booster stations and equipment and other material is being placed on the site, which consists of a tract of 30 acres.

NEW TYPE OF GAS HOLDER

LOS ANGELES, Calif., Sept. 3.—One of the most novel developments in gas storage is the new horizontal high pressure gas holder perfected by engineers of the Southern Counties Gas Co. It is not unlike a "blimp" in appearance; averaging about 145 feet in length and 27 feet in diameter.

These gas holders, 12 of which have been fabricated, have been placed at important points in the Southern Counties Gas Co. system.

They are usually erected in batteries of from two to four. They provide a secondary source of supply, instantly available and entirely controllable to meet the needs of a specific district. The reliability of service is thereby increased greatly.

PANHANDLE CARBON PLANTS

AUSTIN, Tex., Sept. 3.—The Railroad Commission has authorized the General Atlas Chemical Co. to use 4,000,000 feet of casinghead gas daily for manufacture of carbon black at Pampa. Chief Engineer Parker has recommended permit to the Skelly Oil Co. to use 50,000,000 feet daily of residue from gasoline plants in Hutchinson County, about Borger.

ELECTRIC ARC WELDED PIPE TESTED IN THREE POSITIONS

By A. G. Bissell
General Engineer, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

In order to determine the value of an arc welded joint in standard steel pipe a series of tests was made on National Tube Co. standard 6-inch pipe in which all of the joints were arc welded. That an average result might be obtained the joints were made in three positions.

The pipe samples to be welded consisted of 12-inch lengths of standard 6-inch pipe. The ends to be welded were beveled 60 degrees, leaving approximately one-sixteenth inch shoulder between the bottom of the bevel and the inside of the pipe. The opposite ends of the pipe were threaded for standard 6-inch pipe coupling. The welding was done in two layers, the first layer being well brushed with a stiff wire brush before the second layer was applied.

Description of Tests

No. 1. One set of welds was made on samples of this pipe, joining the two sections together by doing the welding in a flat down hand position and rolling the pipe as the welding progressed.

No. 2. A second set was made using the same size pipe, but in this case the pipe was secured in the vertical position and the weld made on the horizontal seam around the pipe. In this case the operator had to move around the pipe as the pipe held stationary.

No. 3. The third set was made of the same pipe with the pipe held rigid in the horizontal position. In this case it was necessary to weld this pipe in the flat, vertical and overhead position.

Time, Material and Energy

To weld the first specimen it required an average of 24½ minutes per joint, using 0.967 pounds of welding wire and approximately 2 kilowatt hour of electrical energy per joint.

The second set of specimens or the vertical test pieces required an average of 25 minutes to weld each joint. An average of 1.36 pounds of the wire was used in making each of thes joints, using approximately 2.3 kilowatt hours of electrical energy per joint.

The third specimens or horizontal test pieces were welded in an average of 33 minutes per joint, using 1.4 pounds of electrode wire and an average of 2.7 kilowatt hours of electrical energy per joint.

Tensile Tests

After being welded, a sample of each test pipe was cut into strips about 2⅝ inches wide, making tensile strength test pieces which were pulled in a tensile testing machine. It was found that the first specimen developed an efficiency of 96.25 per cent of the tensile strength of the original pipe. The second test or the vertically welded pipe developed a tensile strength of 90 per cent and the third or horizontal test specimen developed an efficiency of 95.75 per cent.

There was one or more of the strips from each set of specimens that broke outside of the weld in the original pipe, so we considered this tensile strength as the tensile strength of the original pipe and on this basis computed the efficiency of the welded joint.

Caps were made by blocking off one end of the standard 6-inch couplings by arc welding a disc into them. With one of these caps on each end of the welded specimen a hydraulic pressure of 550 pounds was applied to each specimen without any signs of leakage at the welded joints showing. By maintaining a hydraulic pressure of over 100 pounds, a specimen from each set of tests was subjected to a crushing pressure at the welded joint. This pressure was applied with the pipe between two 2½-inch bars. It was found that the screw joint at the end caps began to leak badly long before the joint has been appreciably deformed. The tabulated results show the extent to which the pipe was crushed before the screw joint leaked so badly that further crushing had to be abandoned. In two cases the pipe without water in it was crushed, and it was found that the pipe welded in it was crushed, and it was found that the pipe welded in the vertical position (Test No. 2 was crushed from its original diameter of 6⅝ inches to a diameter of 2¾ inches, using a pres-

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"GALLOPING HORSE" IN KANSAS GAS MAIN

Spook experts have solved the phenomenon of the galloping gray horse at the culvert west of the city, says the Chanute (Kans.) Tribune. The horse continues to gallop and even if one knows the solution it is interesting to hear the clatter of the hoofs.

Here is the analysis of the bewitching sound that for all the world resembles a horse coming down the road in a quick gallop. Two gas lines, one a 12-inch and the other a 16-inch line, lay alongside the road. At the "spooky" culvert the covering over the pipe is very thin, and at certain periods the vibrations from the compressors at Vilas station can be heard very distinctly, and for all the world like the sound of a galloping horse. Workmen who examined the line, found it in perfect condition in every way.

A similar "galloping horse" can be heard several miles from the Cambridge station, where the line to Wichita lays in similar proximity to a culvert.

MIRANDO TO SUPPLY RIO GRANDE VALLEY

SAN ANTONIO, Tex., Sept. 3. — Gas through the Rio Grande Valley Gas Co.'s line from the Mirando district to the Lower Rio Grande Valley will be available for use in McAllen and Edinburg, two of the valley cities, early this month.

There are 137 miles of 12-inch main and 22 miles of 8-inch from San Benito to Brownsville. Of the 12-inch 85 miles from the field to McAllen has been laid and all the 8-inch from San Benito to Brownsville. The distributing systems are complete in Edinburg and Brownsville and will soon be completed in McAllen and are under construction in the other towns.

The power plant which supplies electricity to the entire Rio Grande Valley will use natural gas from the Rio Grande Valley Gas Co. lines and it is expected it will be a large consumer. Gas for the line will be supplied by the Southern Gas Co. of San Antonio which has extensive gas leases in the Mirando territory in Webb, Duval, Jim Hogg and Zapata Counties.

SAN ANGELO GAS CONTRACT

SAN ANGELO, Tex., Sept. 3. — The industrial contract for gas has been signed by the West Texas Utilities Co. and the Western Gas Service Co. The gas company is piping natural gas here from Coleman County gas fields. The contract calls for the use of from 25,000,000 to 100,000,000 feet of gas a month. It gets a low industrial rate and means cheaper fuel for the local utility company, which has equipped its engines for the use of either gas or oil.

ADDITIONAL FORCES ON AMARILLO LINES

Three hundred and seventy men have been added to the gangs employed by Booth & Flinn, contractors in charge of the construction of the Empire's 20-inch natural gas pipe line from the Panhandle gas fields to Wichita, Kans. This increase will make a total of five main line construction and two river-crossing gangs rushing this project to completion. Four line gangs are working at present, the fifth to be organized within the week. When this gang is fully manned, says the Empire, over 800 men, exclusive of Empire inspectors, will be on the job.

One river gang is employed on the Canadian River crossing and the other on the North Canadian, near Woodward. The Ninnescah River crossing, near Clearwater, Kans., has practically been completed. Three lines were laid along the bank, vertical to the flow of the stream, and reinforcing strips and river clamps installed on each joint of pipe laid in the main riverbed. There will be seven river crossings, three of which will be spanned by three 12-inch lines. It is necessary to pull the pipe across each of the main streams, a 1-inch steel cable being used.

To date more than 160 miles of pipe has been received, 1,128 cars (33,840 tons) of pipe have been shipped and received. About 30,000 20-inch couplings will be used on the entire line. Over 19,000 gallons of paint primer, 1,750 tons of coal tar enamel and 12,700 gallons of coupling paint will be used.

WEST TEXAS GAS CO. LINES MAKING PROGRESS

AMARILLO, Tex., Sept. 3.—First consumer of the West Texas Gas Co., a subsidiary of the Prairie Oil & Gas Co., which is constructing a natural gas pipe line from the Panhandle field to the South Plains area, will be the Randall County courthouse at Canyon.

A record was made in completing the line from Amarillo to Canyon, Happy, Tulia, Kress and Plainview. Connor & Son Construction Co., the builers, are now working on the 16-inch line from Amarillo to the corner of Moore, Hutchinson, Carson and Potter Counties, where the gas supply is to be obtained. Barber-Greene ditching machines were used on the line from Amarillo to Lubbock.

Gas will be turned into the Canyon city plant in a week, and it may be available at Lubbock early in September.

In addition to the completion of the work on the line from Amarillo to Lubbock and the towns between the two, the West Texas Gas Co. is now laying a 6⅝-inch welded line in the city of Midland. Its work there was done ahead of actual construction work, so the task of paving Midland would not be delayed. It will be early in 1928 before the extension south from Lubbock to Midland will be started.

NEW LINE FROM MONROE

MONROE, La., Sept. 3.—Surveys have been completed by the Industrial Gas & Development Co. for the laying of a 7-inch gas line from the Monroe Field to Hodge, Jackson Parish. The line will have a capacity of 5,000,000 feet of gas daily and will supply fuel primarily to a large paper mill at Hodge. It will be 43 miles long. Construction of the line will begin in September.

TO MOVE OIL AND GAS BUREAU

LOS ANGELES, Cal., Aug. 27.—Announcement is made that the oil and gas division of the State Mining Bureau may be transferred from San Francisco to Los Angeles in the near future.

CP Air Compressors

Far From the Beaten Path

A few of the salient features of CP Tandem Air Compressors:

- Simplate Valves.
- Two-Stage unit construction for high pressures.
- Two-Stage duplex units for low or medium pressures.
- Easily installed—small foundation—often mounted on skids together with electric motor.
- Easily moved from one location to another.
- Medium capacity and in sizes adapted to battery installation for centralized control.
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WHERE the going is rough, as is most frequently the case in the oil fields, is where you will find CP Air Compressors employed in the flowing of wells by the air or gas-lift. CP Compressors first attracted attention to their portability and dependability when supplying the air for the erection of storage tanks. It was a logical sequence they should receive early call to meet the needs of the producers for the flowing of wells. They have made good.

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EQUIPMENT AND SUPPLIES

GARDNER GOVERNOR CO. AND ROCK DRILL MERGE

The merger of the Gardner Governor Co. of Quincy, Ill., and the Denver Rock Drill Manufacturing Co. of Denver, Colo., has been announced. The new corporation is known as the Gardner-Denver Co., with headquarters at both Quincy, Ill., and Denver, Colo. This merger brings together two of the largest manufacturing companies in their fields. The products made are complementary to each other and by joining the two lines, the Gardner-Denver Co. offers a complete service to users of pump, compressors and rock drills.

For over 65 years, the Gardner Governor Co. has been builders of quality pumps, compressors and governors. From a small two-man shop, started in Quincy in 1855 by R. W. Gardner, the company has seen a steady growth until today it furnishes employment to over 600 men.

The Denver Rock Drill Manufacturing Co. specializes in rock drills, drill steel sharpeners, scraper hoists, concrete breakers, and allied accessories. Its products are in use throughout the world. Twenty branch offices are maintained in the United States. In addition, there are sales offices in England, Spain, Mexico, Chile, Australia, New Zealand, Canada, South Africa and Japan. Over 600 people are employed by Denver Rock Drill Manufacturing Co.

J. W. Gardner will be chairman of the board of the Gardner-Denver Co. and W. H. Leonard of Denver will be president.

NEW DESIGN OF TAKEUP PLACED ON MARKET

The Link-Belt Co., 300 West Pershing Road, Chicago, announces an improved design "protected screw" type takeup for heavy work and long-movement, to be known as style "DS." Its details of construction and design are said to conform with sound engineering practice, diameters of screws, lengths of bearings, strengths of frames, etc., all correctly proportioned for the size of shaft, and length of movement insuring maximum strength with minimum weight and strength.

The frame is of welded structural steel with channel base welded to ends formed of steel plates, bent and welded into strong box members, in which the adjusting screw is mounted. The steel angle bolted on top of ends protects the screw from dirt or the weather, in addition to tying the ends together, strengthening the frame and preventing upward movement of bearing. The protected screw remains fixed in position, and the nut for adjusting the movement of bearing travels on the screw.

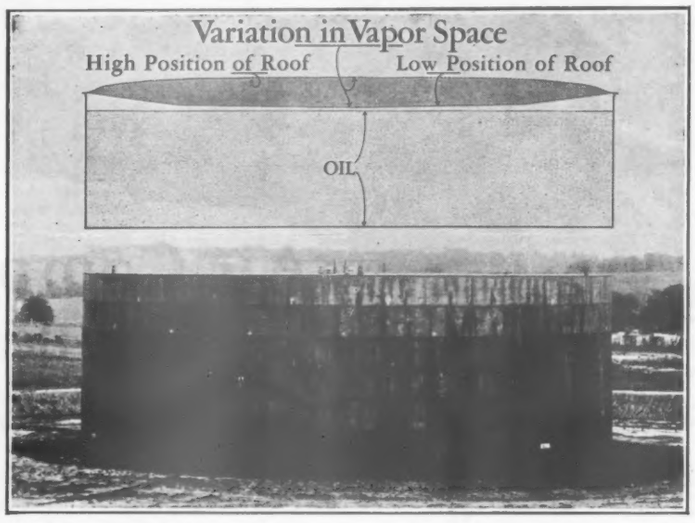
The movement-adjusting screw does not project beyond ends of frame, or require additional space and special framing. The rugged cast iron bearing is lined with high-grade of babbitt, tapped for grease cup or pressure fitting, and is correctly proportioned in length for each diameter of shaft.

OPENS DALLAS OFFICE

Ross Heater & Manufacturing Co. of Buffalo, N. Y., has established an office at room 309, American Exchange Bank Building, Dallas, Tex., under the supervision of W. K. Kirby. The Dallas office will handle Texas, Oklahoma, Louisiana and Arkansas. Ross Heater & Manufacturing Co. manufactures equipment for refineries, casinghead gasoline plants and power plants. Mr. Kirby has had 20 years' experience in all branches of the oil industry and has been connected with some of the largest oil companies and engineering firms.

NEW OIL TANK ROOF IS BEING INTRODUCED

A new oil tank roof recently introduced in the oil industry has been developed by John H. Wiggins, the inventor of the Wiggins floating roof, and is a companion roof to the "Floater." Though the Wiggins floating roof stops evaporation as effectively on standing storage as on working storage, Mr. Wiggins determined that evaporation from standing storage could be stopped with a device of simpler construction. With this thought in mind he designed and carried on exhaustive experiments on the Wiggins "Breather."



The Wiggins breather stops evaporation by providing a variable gas-tight volume to take care of expansion and contraction of the air-vapor mixture above the oil without allowing any of the vapor to escape.

The Wiggins breather roof may be constructed on old or new steel tanks. The steel plates are welded together and to the top of the tank shell, but are not fastened to the supporting framework. The distinctive feature of the "breather" is that the roof framing is designed so that the roof, when resting on it, dips below the top of the tank shell and forms an inverted frustrum of a cone.

During the night a Wiggins "Breather Roof" on a tank full of oil is in its down position and is resting on the roof framing. As soon as the sun warms the air-vapor mixture above the oil this mixture expands. Instead of some of the mixture being forced out of the tank the roof flexes up enough to provide additional volume for expansion. The breather keeps rising slowly until the hottest part of the day and then when the mixture cools and contracts it returns slowly to the down position.

The Wiggins Breather is equipped with a vacuum relief valve and volume relief for filling and emptying and emergencies. The vacuum relief is a liquid sealed vent of improved design and practically foolproof. The volume relief valve is a mechanically operated valve which opens when the breather reached its maximum upper operating limit.

When a tank is full or nearly full the breather will stop all ordinary evaporation. However, the outage may be as great as 3 feet without the loss of vapor. The advantage of having the tank as full as possible is that there is less air-vapor mixture above the oil to expand.

NEW INDIANA TRUCK BRANCH

Indiana Truck sales have made good progress in the Oklahoma oil fields and it was necessary for the Indiana Truck Corp., with factory and main offices at Marion, Ind., to establish a factory barnch at Tulsa, Okla., in addition to the Texas branch in Dallas. Both branches will be under the supervision of Paul R. McMahan, with the Tulsa branch in direct charge of L. A. Murdoch, who has been connected with the Dallas branch for several years, most recently as district salesman at Breckenridge, Tex.

CLIMAX ENGINEERING OFFICERS

The directors of the Climax Engineering Co., Clinton, Iowa, have elected George W. Dulany, Jr., chairman of the board of directors, and Edward F. Deacon, president to succeed Mr. Dulany, and also elected W. E. Eberhart, Jr., treasurer. Both Mr. Deacon and Mr. Eberhart have for some time been assistants to G. W. Dulany, Jr., chairman of the board of the G. W. Dulany Trust, with offices in the Narris Trust Building, Chicago, and will now relieve Mr. Dulany of active responsibility for the Climax company.

TRADE LITERATURE RECEIVED

From International Harvestor Co., the current number of Harvester World.

From Oakite Products, Inc., New York City, the current number of Oakite News. This contains a section devoted to cleaning various pieces of equipment used in the petroleum industry with illustrations of the use of Oakite.

From Henry Vogt Machine Co., Louisville, Ky., a copy of the new refinery bulletin No. RE-4. This publication contains many interesting and instructive illustrations of heavy refinery equipment, pressure stills, wax presses, and other items connected with modern refining practices.

From Bridgeport Machine Co., Wichita, Kans., the current issue of the Bridgeport Driller.

From International Nickel Co., New York, the current issue of Inco, the house organ of that concern.

From Parkersburg Rig & Reel Co. the current issue of Rig and Reel, and a folder describing Parkersburg steel bolted tanks.

NEW BOTTOM WELDER FOR CYLINDRICAL TANK

A new carbon arc automatic welding machine has just been placed on the market by the Lincoln Electric Co. of Cleveland, Ohio. The equipment is designed for the purpose of welding bottom seams on cylindrical tanks.

The equipment is standardized for tanks up to 6 feet in diameter and 8 feet high. Special equipment may be furnished to handle any diameter or length of tank.

On 14-gauge material a lap head seam on some tanks has been welded at the rate of 135 feet per hour. The edge weld used on the bottom of some types of range boilers may be welded at the rate of 150 feet per hour, as the bottom is flanged and fitted so that the edges are together and flush with each other.

Tanks which are to have the bottom seams welded are set on the revolving table and the arm carrying the automatic welding head is adjusted to bring the arc on the seam. Speed of the revolving table and the arm carrying the automatic welding head is adjusted to bring the arc on the seam. Speed of the revolving table is adjustable over a wide range to handle various sizes of tanks. Welding current is adjustable through the controls located on the welder control panel. The operator has automatic stop and start control on the automatic welder head.

It is claimed that the equipment has general application in the tank building field, where large numbers of relatively small diameter tanks are built.

NEW LINE OF TRUCKS BEING INTRODUCED

Graham Brothers, the truck division of Dodge Brothers, Inc., has introduced a complete new line of trucks, the feature of which is a fast and powerful six-cylinder 2-ton chassis available in three types. The introduction of the six-cylinder 2-ton truck and improvements in the present line of fours in three-quarter, 1 and 1½-ton capacities constitute a notable step in truck design. The quick acceleration and braking and the fast economical service on the open road of these new trucks, the company says, is comparable to that of the fine passenger car, while the qualities of strength and dependability are retained.

A four forward speed transmission in the new 2-ton chassis, it is said, assures surplus pulling ability for emergencies and makes possible moderate engine speed for fast, long runs. The recently introduced new four-cylinder engine in the lighter capacity models also has the advantage of moderate speed in fast service.

PIPE FROM 16 INCHES TO 6 FEET DIAMETERS

Pipe that can be used as conduit, double well casing or in other ways, in diameters of 16 inches to 6 feet, is being made by the Butler Manufacturing Co., of Kansas City, Mo., and Minneapolis, Minn. The pipe is made of blue annealed copper steel or tank plates and can be secured in any quantity desired. Mammoth machinery has been installed to handle and automatically and electrically weld this pipe. On this account the company says production is placed on a large scale, resulting in speed and economy.

The pipe comes in any length or gauge required. However, it is regularly made in 10-foot lengths or multiples thereof. The ends of the pipe are plain to be welded together.

The Empire Gas Co. is using this pipe in 16-inch and 24-inch diameters.

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A DERRICK to be truly economical must deliver long years of continuous service—must be used again and again, in one location after another—must have light weight with great strength—must be simple to erect and to dismantle—must be easy to transport from place to place. ***Here the Moore Tubular Steel Derrick has no equal.***

Brute Strength

A steel tube 10 feet long, weighing 10.5 pounds per foot, will carry a compressive load of 34,100 pounds, as against 21,400 pounds for the next best steel shape of the same weight. ***Compressive strength***—that's what the Moore Tubular Steel Derrick provides, ***and that's what you need.***

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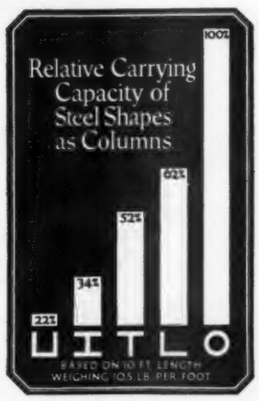

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Henderson Iron Works, Shreveport, La.

Double Gate Parallel Seat Valve

KENTUCKY-TENNESSEE

(Continued from Page 63)

is still plenty of room in the area for other rich pools. Allen, Warren, Simpson, Cumberland, Monroe and Clinton Counties failed to report any completions, the completions being confined to Ohio, Barren and Daviess Counties.

Recently large blocks of acreage have been taken under lease in McLean County to the west of Ohio County and this county will be given a more thorough testing than ever before. Dimick Brothers are the first to make a location in that county, which is on the John Rutledge property, not far from the Daviess County line. The rig is already on the ground. This firm expects to drill several tests there.

Roy Hogan, Fowler and Anderson, drilling near Rochester, Butler County, are going into the Barlow sand for a good showing, hoping to improve the showing they already have.

Ohio County

While the larger operators in the Ohio County Field are resting on their present production awaiting a higher price for crude, many new concerns are entering the county for the purpose of securing acreage, while some of the older companies in the county are trying out new territory. The fields of the county are widening. Daley & Loman are now drilling a test on the Baker farm, south of Rough River, and the most southerly well in the county and should it prove a commercial producer will encourage further operations in the southern part of the county.

Leasing activities at this time are well scattered over Ohio County, and the trend of development is steadily westward. another well being drilled at Red Hill attracting attention, and the center of leasing at this time is midway between the Ambrose Pool and the King Pool, in the vicinity of Bell's Run, in the territory where the well was found on the Ezell 130-acre farm. As the trend of development appears to be the west, deeper drilling is required, as there is a gradual dip of the sands in that direction, as do the coal veins in that area.

The surprise was the bringing in of three dusters where good wells were expected. The Ohio Oil Co.'s third test on the D. A. Gray 80 acres, just west of the Ambrose Pool, set a string of 612 feet of casing, got the sand from 612 to 625 feet and went to a total depth of 656 feet, and shot with 100 quarts developed a dry hole. No. 2, same farm, was dry at 945 feet, and No. 4 was dry at 671 feet. No. 1, completed last month on this farm, which is west of excellent production on the same company's Rodney Taylor farm, had an initial production of 150 bbls., showing that the territory is somewhat spotted.

Daugherty and others' No. 1 on the E. G. Owen west 41 acres, proved a dry hole at 764 feet. This is an adjoining farm to the south of the west end of the Gray farm, where the three dusters were found. In the same area Bolling and others are drilling a test on the Joe Chapman 80 acres, a mile or so northwest from the Gray farm, while Engle and others are working at a test a half mile south from the Gray farm dusters.

Daley & Loman's No. 1 well on the Ollie Ezell 130 acres, a mile or so northwest of the Gray farm, set a string of 725 feet of casing, got the sand from 725 to 757 feet and went to a total depth of 773 feet and shot with 140 quarts and is reported a 30-bbl. producer. This well is currently reported at 200 bbls. initial, but not confirmed.

James C. Ellis is reported to have what shows for a producer in his test on the Ada Keith farm, in the Mt. Moriah Church area, southeast of the Ambrose Pool, which may open up something new. He is also drilling a test on the Mt. Moriah Church property to the west of the Keith farm lease.

The Creek Drilling Co., or Miller & Dameron, are drilling a wildcat on the Duke lease 5 miles from the Ambrose Pool, at what is called the Paolo School area. This well is nearing a depth to show soon its worth. Should it become a producer, it will add a big area between it and the Ambrose Pool.

To the southeast of the Ambrose Pool and east of the Mount Moriah Church, Taylor Yewell is drilling an important wildcat on the Robert Hamilton farm, just west of Rough River, and near a lease that James C. Ellis recently purchased and gave what is said to be the highest price yet paid for a lease in that part of the county.

H. P. Evans and others, who recently drilled in a dry hole on the St. Clair farm, north of Dundee and southeast of the Ambrose Pool, went a little to the east and brought in a nice gas well.

In the north end of the county, the Penn-Indiana Oil Co.'s No. 9 on the Powers farm is reported showing for around 10 bbls.

R. C. Young is drilling a test on the Hayden farm, south of the Weller farm. Southeast of the Weller D. L. Johnson failed to find any oil in the Jett sand on the C. D. Wade farm, and is going to the Barlow. He is also drilling No. 1 on the Hodges farm.

White Plains Oil & Gas Co. is drilling No. 3 on the Ury Howard 214 acres, in the Midkiff Pool.

Daviess County

In the Roby Pool, southwest of Pellville, in Daviess County, near the Ohio County line, Thompson & Tremor's No. 3 on the John M. Miles lease of 57 acres is reported at 70 bbls. initial, and No. 4 is starting up. Petroleum Exploration Co. is drilling No. 4, Frank E. Coomes 78 acres, same pool.

P. A. Rowe and others are starting a test on the Daviess County Poor Farm, about 5 miles southwest of Owensboro, and the closest drilling well to Owensboro. The drilling contract has been taken over by the Leeper Oil Co. of which Clarence A. Leeper is the head, an old-time operator in many fields.

Dimmick Brothers, from West Virginia, secured a block of leases near the hamlet of Livia, in Daviess County and starting a purely wildcat venture. This is far in advance of production and will be watched with much interest.

Field Notes

No. 13 on the Elmore 100-acre lease, in the Ambrose Pool of Ohio County, owned by the Wood Oil Co., caught fire when shooting, the oil charge becoming ignited at a point nearly 100 feet above the mouth of the hole, falling back, destroying th erig and burning near-by trees upon which the oil sprayed. Live steam was applied to the mouth of the hole to prevent the blaze from catching there until it could be capped. After several hours the fire was extinguished without much damage to the well itself.

Sale of a franchise to James C. Ellis and J. Fred Miles for the laying of a pipe line in Ohio County for the transportation of oil was approved, the bid of the above named parties, $100, being the highest received.

Barren County

In the Lecta Pool of the Glasgow Field of Barren County, Hunt, Leach and Mitchell's No. 23 on the Vance G. Taylor farm, is reported at 20 bbls. initial from the Blue sand.

Eastern Kentucky

Only one completion is reported from the eastern Kentucky division being a dry hole drilled by the Petroleum Exploration Co. in a test on the John Wilson farm, District 37, of Owsley County.

The Trico News has this to say of the Island Creek Field of Owsley County: "Contrary to all reports of the Island City wells drilled in Owsley County, Kentucky, the well brought in by the Petroleum Exploration Co. indicates there are excellent possibilities of opening up a small pool in that section. Superintendent A. H. Wagner reports that the sand found in the well is as fine as can be seen anywhere, and is similar to the Injun and Keener sands in West Virginia. No. 1, on the J. F. Brewer farm, was drilled in in August by Petroleum Exploration Co., and thus far has never been pumped off. It has averaged around 145 bbls. daily since being brought in and it is estimated the production could easily be doubled if necessary. The Brewer well is an offset to the second big producer drilled by the Big Injun Oil Co. and is the fourth well to be drilled in this section, all of which have been good wells. The Atlantic Oil & Producing Co. is drilling an offset on

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TNEMEC PAINT consists of pure, heat-treated linseed oil, into which Portland Cement is incorporated by a patented process, with tinting pigments added as desired.

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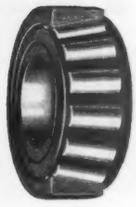
"Because of ruggedness and ability to withstand severe service," states Allis-Chalmers, they selected Timken Tapered Roller Bearings for their latest oil well countershaft —designed to be driven on short centers by a Timken-equipped Allis-Chalmers motor.



Rigidity was a principal aim. The shaft housing, for example, was cast integral, full width of the base. The Timken Bearings were preferred, not only for friction elimination and power economy, but for the permanent rigidity assured by greater Timken load area and full thrust capacity.

Shock, whip, weight, overload—and neglect—unavoidable in the oil fields, are harmless against Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken electric steel.

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TIMKEN *Tapered Roller* **BEARINGS**

the Chadwell lease, 1,000 feet from the Brewer tract, and it is understood State Geologist W. R. Jillson of Kentucky has a 100-acre lease adjoining the Chadwell farm which he intends to develop. Originally Petroleum Exploration gave the Big Injun Oil Co. 50 acres of the Brewer farm for drilling a test well and last November a gusher was brought in which caused a great deal of excitement throughout the state. It was reported that the test was a freak and that there was hardly any sand. With the completion of the other wells it was found that the sand was regular and gave evidence of a good producing field. Petroleum Exploration holds 260 acres in practically the center of the pool and doubtless will result in a number of good wells for the Trico company. Drilling is not expensive in view of the fact that the sand is found at about 700 feet and 12 feet in thickness."

CENTRAL WEST FIELDS

(Continued from Page 63)

feet in the sand. This is a new sand for the field, being several hundred feet below the pay in which much of the crude has been produced in the field. It is the first real deep test made for a long time in the field, and if it maintains its production, will mean deeper drilling from now on, if the upper sands fails to produce. Joe Young, Jr., and others' test in the northwest corner of the A. Tanguary heirs farm, in the northwest quarter of Section 35, 2½ miles northwest of Allendale, in Wabash Township and near the dividing line of Wabash and Lawrence Counties, came in a duster at a depth of 1,520 feet. Same firm is drilling No. 6 on the Joe Keyser farm, Section 13, and the Adams Corner Oil Co. is drilling No. 10 on the M. Madden farm, Section 6.

In Friendsville Township, Wabash County, Miller & Lengelsen's test in the northeast corner of the G. L. Crum farm, in the northeast quarter of Section 14, and about a mile and a half north of the hamlet of Friendsville, came in a duster. In Dennison Township, Lawrence County, the Ohio Oil & Associated Producers have a rig in for No. 38 on the Smith-Neeley farm, Section 2. The Ohio Oil Co. is drilling No. 20, Laura Jenner farm, Section 36, and No. 13 on the C. J. Borden, trustee, farm, Section 35 Dennison Township.

In Martin Township, Crawford County, Abbott and others are drilling a test on the William Dunlap farm, Section 12, and H. D. Barker and others are working a test on the J. S. Baker farm, Section 13. In Casey Township, Clark County, W. C. McBride, Inc., is drilling No. 28 on the James Rush farm, Section 25. In Centralia Township, Marion County, the Petro Oil & Gas Co. is drilling No. 14 on the John Kinsey farm, in the northwest quarter of Section 30. Upton Oil Co. is drilling No. 1 W. O. Mills farm, Section 15, Grandville Township, Jasper County.

Central Ohio

Central Ohio operators did not do so well during the week in development work, although an even dozen completions are reported, of which 2 were oil with an initial of 28 bbls., and 10 were gas wells. The gas companies are holding up their usual amount of work, which lags at times but comes back just as thick. Numerous new wells have started up over a large area, although but few new locations have been made of late.

Knox County

In Jefferson Township, Knox County, the East Ohio Gas Co.'s No. 1 on the P. B. and M. Strobel 70 acres, Section 20, is a very fair gas producer, and No. 1 on Alvin Melton 50 acres, Section 4, is drilling. Ohio Fuel Gas Co. is drilling a test 845 feet from the south line and 1,250 from the west line of the A. F. Zimmerman 98 acres, Section 34.

In Butler Township, Bell Brothers' second test, 900 feet from the south line and 300 from the east line of the Allen Clark 80 acres, Section 20, is a very light gas well. No. 3 well, 300 feet from the north line and 500 from the east line of the same farm, is drilling.

In Brown Township, H. E. Perkins is drilling a test in the southeast corner of the E. M. Wander 82-acre farm, Section 21.

In Clay Township, Guerney and others made a location for a test 1,300 feet from the north line and 50 from the west line of the Jerry Foss 52 acres, Section 6.

Ashland County

In Orange Township, Ashland County, the Logan Gas Co. has a fair gas well at a test 1,343 feet from the north line and 1,320 from the west line of the Ida Swope 160 acres, Section 3. Ohio Fuel Gas Co. is drilling a test 660 feet from the north and west lines of the Juliatte McConnell 195 acres, Section 1.

In Hanover Township, the Logan Gas Co. has a good gas well at a test 1,000 feet from the north line and 800 from the east line of the George Wilson 27-acre farm, Section 19.

In Sullivan Township, the Logan Gas Co.'s test, 690 feet from the north line and 726 from the west line of the Dolph W. Stentz 100 acres, Lot 97, is a light gas well, while this company's test, 500 feet from the south line and 750 from the north line of the O. W. Holmes 50 acres, Lot 82, is a good gas producer. The Kemrow Co. is starting No. 4 well, 650 feet from the north line and 100 from the west line of the S. Sponsler 139 acres, Lot 100.

In Clear Creek Township, the Logan Gas Co. is drilling a test 660 feet from the south line and 400 from the west line of the J. J. and Thomas Brown 80 acres, Section 12. In Green Township, the Ohio Fuel Gas Co. has started drilling a test 470 feet from the south line and 600 from the east line of the R. G. Marks 60 acres, Section 27.

Medina County

No completions were reported in Medina County. In Lafayette Township, the Empire Gas & Fuel Co. is drilling a test in the northwest corner of the John T. and Rebecca Neisz 111 acres, Section 5, and the Ohio Fuel Gas Co. is starting a second test 375 feet from the south line and 1,500 from the east line of the Leon J. Reynolds 99 acres, Section 35.

Empire Gas & Fuel Co. is drilling a second test in the southwest corner of the C. L. White 47 acres, Lot 37, Medina Township.

Lorain County

A gas well above the average was struck by the Ohio Fuel Gas Co. in a test in the northwest corner of the Louis A. Krueger 79 acres, Lot 15, Columbia Township, Lorain County. Same company is drilling a test 1,425 feet from the south line and 300 from the east line of the R. R. Fitch 50 acres, Lot 16, and made a location for a test 871 feet from the south line and 660 from the east line of the J. and H. Longbon 100 acres, Lot 12. Same company is drilling a test 700 feet from the north line and 800 from the west line of the J. Grabenstetter 102 acres, Lot 51, Grafton Township, same county.

Wayne County

An average gas well was drilled by the Logan Gas Co. in a test 660 feet from the south line and 590 from the east line of the Ohio P. Ferguson 80-acre farm, Section 16, Congress Township, Wayne County, and drilling 660 feet from the south and west lines of the William Swope 80 acres, Section 12, same township.

In Chester Township, Harmon & George are drilling a second test in the northeast corner of the E. M. Myers 81 acres, Section 8, Chester Township, and the Ohio Fuel Gas Co. is working at a test in the southwest corner of the Jacob and Fannie Tyson 80 acres, same section.

Holmes County

In Monroe Township, Holmes County, the Ohio Oil Co.'s No. 5 in the southeast corner of the O. M. Smitheisler 46 acres, Lot 7, is reported as good for 3 bbls. Arkansas Oil & Gas Co. is drilling No. 4 well, 1,000 feet from the north line and 300 from the west line of the William Miller farm of 20 acres in Lot 11. In Hardy Township, the Empire Gas & Fuel Co. is drilling a test near the northwest corner of the Phillip Collier 112 acres, Lot 19.

In Kilbuck Township, the Kemrow Co.

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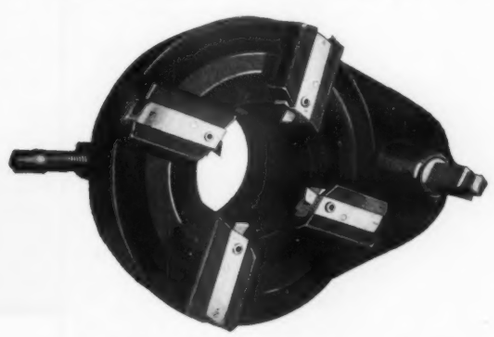

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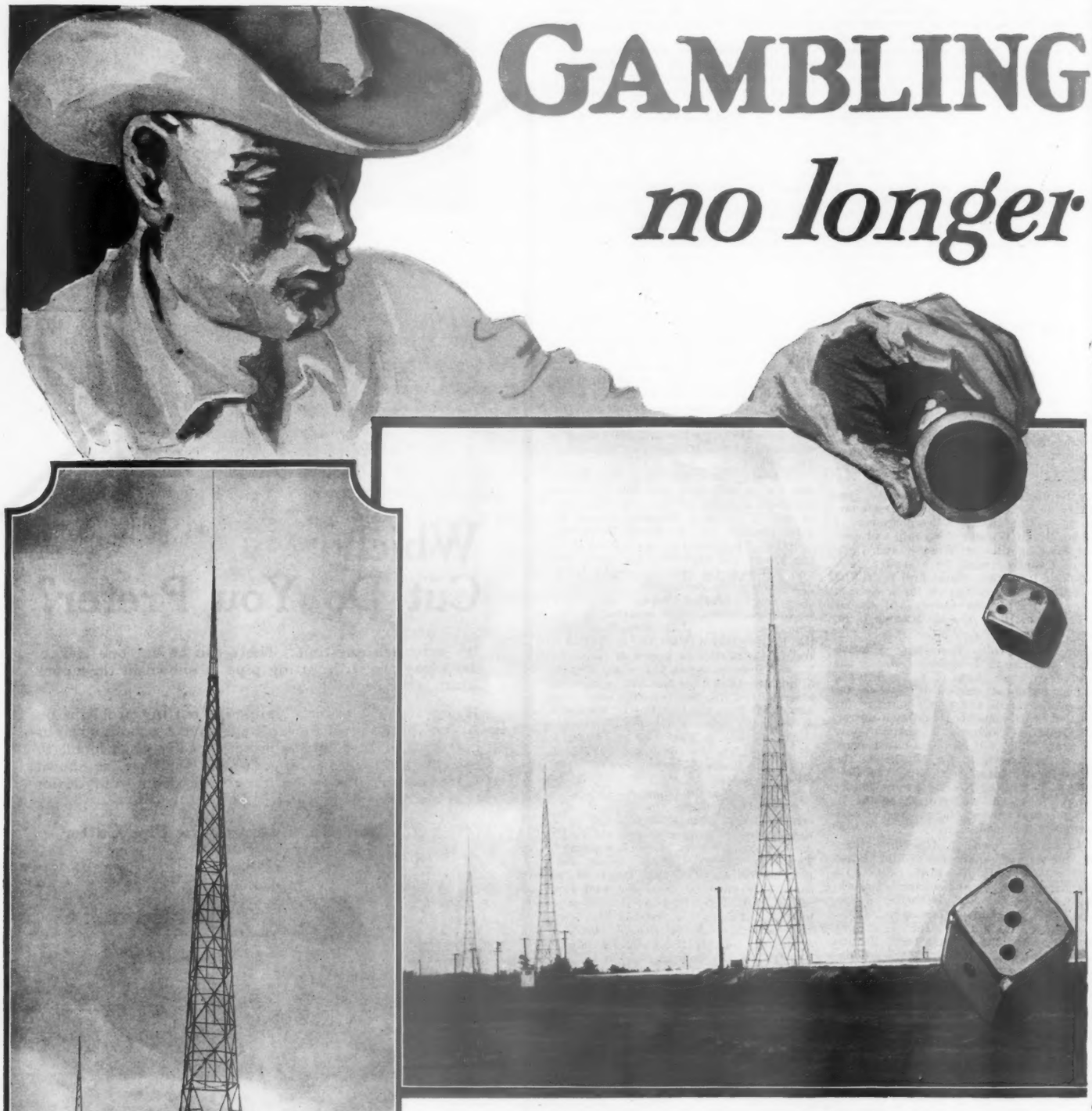

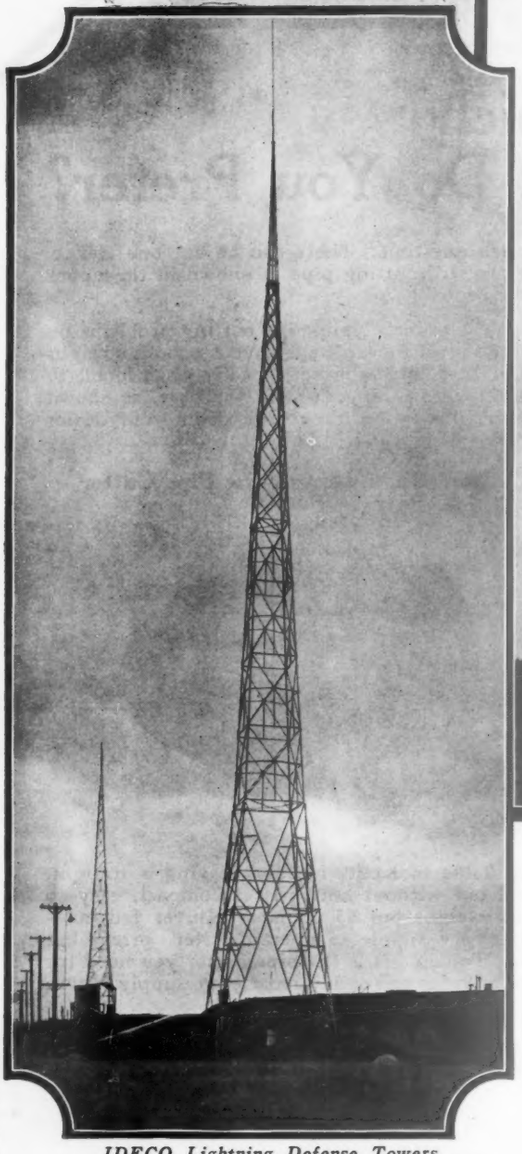

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is drilling a test, 660 feet from the north line and 350 feet west of the road, on the Charles Shuey 80 acres, Lot 13; also drilling No. 3 on the William Sandles 160-acre farm, Lot 21. This location is 400 feet north of the road and 685 feet from the east line of the farm.

The Logan Gas Co. is drilling a test 530 feet from the south line and 865 from the west line of the Daniel Mosier 80 acres, Lot 19, Knox Township.

In Prairie Township, the Ohio Oil Co. is drilling a test 600 feet from the north line and 300 from the west line of the Jacob E. Miller 100 acres, Section 8.

Coshocton County

The Logan Gas Co. is drilling a test in the northwest corner of the Stephen Sells 70 acres, Lot 22. Newcastle Township, Coshocton County.

The Ohio Oil Co. is starting a test 375 feet from the north line and 650 from the west line of the David Mohler 75 acres, Section 9, Monroe Township; and the East Ohio Gas Co. is starting a test in the northwest corner of the D. and M. Mohler 40 acres, Section 9.

Cuyahoga County

Foster & Foster drilled a nice gas well at a test in the northeast corner of the A. G. Hammond 11 acres, Lot 17, Dover Township, Cuyahoga County, getting the gas in the Newburg sand. Goff Brothers also brought in a good gas well at a test 300 feet north of the road and 100 feet from the west line of the Dicker 3 acres, Lot 6, also a Newburg sand producer. This firm is now drilling No. 1 in the northeast corner of the Scharf 1-acre lot in Lot 7. Arthur & Simpson are drilling No. 1 in the southeast corner of the Hass 1 acre in Lot 7; also drilling No. 1 in the southeast corner of the Geiss 1 acre in the same lot.

In Olmstead Township, Arthur & Simpson are drilling a test 475 feet from the south line and 200 from the east line of the H. S. Helson 60 acres, Lot 32. Hulse & Kundtz are drilling a test in the northeast corner of the E. Fisher 5 acres, Lot 27, and No. 1 in the northeast corner of the J. Barrow 21 acres, Lot 32. Daugherty & Dempsey are drilling a second test in the southeast corner of the B. C. Austin 21 acres, Lot 32, and the Logan Gas Co. drilling a second test 600 feet from the south line and 300 from the west line of the Don B. Hall 29 acres, Lot 22.

Summitt County

East Ohio Gas Co.'s test in the northwest corner of the I. J. Woodford 11 acres, Section 7, Richland Township, Summitt County, is reported to have an initial of 25 bbls. John Arthur is drilling No. 1 well, 550 feet west of the road and 360 feet from the south line of the C. J. Neil 90 acres, same section.

Muskingum County

The Logan Gas Co. is drilling a test 660 feet from the north and west lines of the W. C. Copeland 145 acres in the third quarter of Madison Township, Muskingum County.

WELDED PIPE TESTED IN THREE POSITIONS

(Continued from Page 66)

sure of 35,000 pounds, before the weld showed any sign of cracking at the surface. A specimen of pipe welded in the horizontal position (Test No. 3) was crushed from 6⅝-inch diameter to a diameter of 5⅞ inches, using a pressure of 24,500 pounds, before evidence of cracking was discovered in the weld.

RESULTS OF TESTS ON ARC WELDED PIPE

Tensile Tests

Sample 1 Rolled as welded.
Sample 2 Welded in the vertical position.
Sample 3 Welded in the horizontal position.

Mark	Width Ins.	Load Pounds	Lbs. per Linear Inch	Remarks:
1-1	2.375	37,030	15,587	Broke in pipe
1-2	2.125	36,000	16,941	Broke in joint
1-3	2.4375	32,000	13,128	Broke in joint
1-4	2.3125	31,000	13,405	Broke in joint
1-6	2.3125	36,150	15,632	Broke in joint
1-7	2.1875	34,300	15,680	Broke in pipe
1-8	2.000	29,450	15,308	Broke in joint

Average strength per linear inch of joint, 15,050 pounds.
Average strength per linear inch of pipe circ., 15,633 pounds.
Efficiency of joint, 96.25 per cent.

Mark	Width Ins.	Load Pounds	Lbs. per Linear Inch	Remarks:
2-1	2.500	39,900	15,960	Broke in joint
2-2	2.9375	34,900	14,120	Broke in joint
2-3	2.78125	46,900	16,863	Broke in pipe
2-4	2.4375	32,000	13,130	Broke in joint
2-5	2.3125	39,150	16,864	Broke in pipe
2-6	2.375	34,500	14,510	Broke in joint

Average strength per linear inch of joint, 15,281 pounds.
Average strength per linear inch of pipe circ., 16,864 pounds.
Efficiency of welded joint, 90.00 per cent.

Mark	Width Ins.	Load Pounds	Lbs. per Linear Inch	Remarks:
3-1	2.1875	33,000	15,085	Broke in pipe
3-2	2.5625	34,000	13,240	Broke in joint
3-3	2.500	35,650	14,270	Broke in joint
3-4	2.1875	30,800	14,085	Broke in joint
3-5	2.40625	36,900	15,325	Broke in joint
3-6	2.1875	32,050	14,675	Broke in joint

Average strength per linear inch of joint, 14,448 pounds.
Average strength per linear inch of pipe circ., 15,985 pounds.
Efficiency of welded joint, 95.75 per cent.

100 Lbs. Hydraulic Pressure Transverse Tests

Test No.	Orig. Diam.	Deform'd to	Load Pounds	Remarks:
1	6.625	6.0625	28,000	Leaker at screw
2	6.625	5.5625	30,100	Leaked at caps
3	6.625	3.5625	36,000	Leaked at caps
*	7.388	7.1705	36,200	Leaked at caps

*Screwed coupling.
Note: leakage occurred in the welded joints in this test.

Empty Pipe Transverse Tests

Test No.	Original Diameter	Deformed to	Load Pounds
2	6.625	2.75x8.9375	35,000
3	6.625	5.0625	24,000

Note: Loading continued until weld showed failure.

NEW FRENCH REFINERY

A petroleum refinery with a distilling apparatus of 1,000 hectoliters is being built at Dunkirk, France, by La Raffinerie de Petrole du Nord.

THE NEW PRAIRIE BUILDING IN INDEPENDENCE, KANS.

Above is the architects' drawing of the Prairie Oil & Gas Co's. office building in Independence, Kans., as it will appear when the additions to the present building are completed. The enlarged building will accommodate the general offices of the Prairie Oil & Gas Co., the Prairie Pipe Line Co. and the Producers & Refiners Corp. The main offices of the last named company will be moved from Denver, Colo.

The addition will have practically as much floor space as the present building, and will give the Prairie organization double its present office room.

It is expected that the addition will be ready for occupancy shortly after New Year. Most of the steel work is in place and a large force of men will be kept busy until the work is completed.

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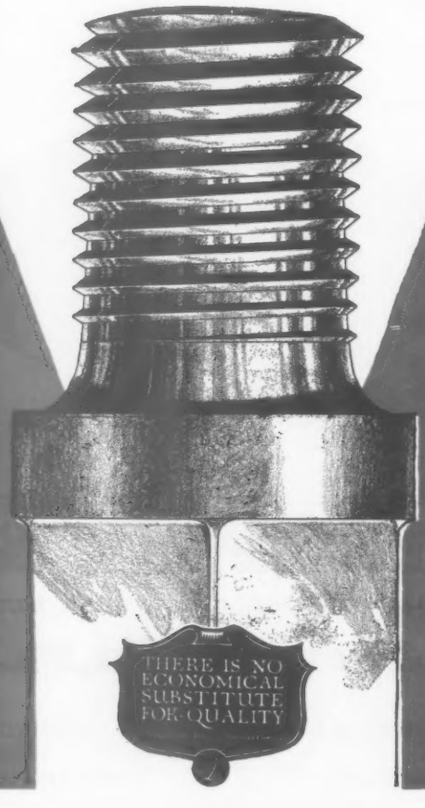


Government Petroleum Statistics for July

By G. R. Hopkins

The production of crude petroleum in the United States in July, 1927, as reported to the Bureau of Mines, Department of Commerce, by companies which operate gathering lines, amounted to a new high figure of 78,333,000 bbls. This represents a daily average of 2,527,000 bbls., an increase of 42,000 bbls. over the previous month. It also represents an increase over the production of July, 1926, of 21 per cent.

The pools of the Greater Seminole Field again held the spotlight. Production from this area in July, 1927, totaled 15,196,000 bbls., a daily average of 490,000 bbls. This compares with a daily average production in June of 386,000 bbls. and in July, 1926, of 10,000 bbls. In a year's time (July 31, 1926, to July 31, 1927) this field is estimated to have produced 80,000,000 bbls. of oil. Decreases in production were quite general outside of Oklahoma, with the Caddo Field, in north Louisiana, and the Wyoming fields, exclusive of Salt Creek, as the only exceptions of importance.

Stocks of crude petroleum of all grades increased materially in July, with the exception of light or refinable crude in California. Stocks of crude petroleum at refineries increased approximately 800,000 bbls.; tank farm and pipe line stocks east of California, over 8,000,000 bbls., and stocks of heavy crude in California by about 1,200,000 bbls. As a whole, the increase in crude stocks in July was ve y close to 9,000,000 bbls., as compared with a decrease in stocks of all refined products of nearly 900,000 bbls.

Refined Products

Runs to stills in July amounted to 71,901 bbls., a daily average of 2,319,000 bbls. This was a new high figure. Because of the increased throughput at refineries, gasoline production set a new high figure of 28,118,000 bb's., a daily average of 907,000 bbls. Domestic demand, however, also rose to new levels and stocks were again materially reduced, this, in spite of a material drop in exports. Domesti demand for July, 1927, was 20 per cent higher than for July, 1926. Stocks on hand at the end of July amounted to 39,069,000 bbls., which, at the current rate of total demand, represents 37 days' supply as compared with 41 days' supply on hand a month ago and 42 days' supply on hand a year ago.

Stocks of gas oil and fuel oil continued to accumulate as production remained considerably in excess of summer requirements. Stocks of wax were again drawn on as demand, both domestic and for export, continued to increase.

The refinery data in this report were compiled from schedules of 332 refineries, with an aggregate daily crude oil capacity of 2,894,000 bbls. These refineries operated during July at 80 per cent of their recorded capacity as compared with 328 refineries operating at 79 per cent of their recorded capacity in June, 1927.

Statistics of Important Fields, July, 1927

Production at Seminole in July rose to unprecedented heights and cons derably surpassed the record for peak production previously held by Smackover. The daily average production for the month was 490,000 bbls., a gain over June of 104,000 bbls., or 27 per cent. This considerable increase was due both to more comp etions and to a larger average initial production per well. Producers' stocks in Seminole continued to rise and amounted to very nearly 10,000,000 bbls. at the end of the month. Drilling activity showed no indications of falling off; in fact, there were more wells drilling on July 31 than on June 30.

Production in the Panhandle and at Seal Beach declined in July.

PRODUCTION AND GRAVITY

(Barrels of 42 U. S. Gallons)

	June, 1927 Total	June, 1927 Daily av.	July, 1927 Total	July, 1927 Daily av.	July, 1926 Total	July, 1926 Daily av.	Average gravi y
Seminole	11,589,000	386,000	15,196,000	490,000	312,000	10,000	41.0
Panhandle	3,800,000	127,000	3,550,000	115,000	2,090,000	67,000	36.0
Seal Beach	1,926,000	64,000	1,832,000	59,000	*	*	24.0

*Undiscovered or undeveloped.

STOCKS AT SEMINOLE

(Barrels of 42 U. S. Gallons)

	July 31, 1927	July 31, 1927	July 31, 1926
Producers' stocks	285,000	380,000	.....
Tank-farm stocks	6,813,000	9,565,000	.....
Total stocks	7,098,000	9,945,000	.....

RECORD OF WELLS, JULY, 1927

(Barrels of 42 U. S. Gallons)

	Completions Oil	Gas	Dry	Total initial production	Av. initial production	Drilling July 31
Seminole	107	2	21	213,600	2,000	461
Panhandle	61	7	7	11,900	200	211
Seal Beach	23	—	—	17,500	800	45

ANALYSIS OF SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

	June, 1927*	July, 1927	July, 1926	Jan.-July, 1927	Jan.-July, 1926
SUPPLY:					
Domestic production:					
Crude petroleum:					
Light	65,335	68,866	53,501	449,938	349,799
Heavy	9,203	9,467	11,667	66,451	76,104
Total crude	74,538	78,333	65,168	516,389	425,903
Natural-gas gasoline	3,093	3,119	2,629	21,951	18,010
Benzol	210	214	179	1,505	1,223
Total	77,841	81,666	67,976	539,845	445,136
Daily average	2,595	2,634	2,193	2,546	2,100
Excess of daily average domestic prod. over domestic demand	378	426	21	437	27
Imports:					
Crude	4,019	4,675	5,185	30,443	36,810
Refined	1,448	1,202	1,992	9,132	12,743
Total supply all oils	83,308	87,543	75,153	579,420	494,689
Daily average	2,777	2,824	2,424	2,733	2,333
Change in stocks all oils	4,080	7,952	†2,667	51,321	†20,355
DEMAND:					
Total demand	79,228	79,591	77,820	528,099	515,044
Daily average	2,641	2,567	2,510	2,491	2,429
Exports‡					
Crude	1,410	1,089	1,726	8,628	9,299
Refined	11,307	10,057	8,762	72,342	66,243
Domestic demand	66,511	68,445	67,332	447,129	439,502
Daily average	2,217	2,208	2,172	2,109	2,073
STOCKS (end of month):					
Crude:					
East of California:§					
Light	268,217	277,772	221,535	277,772	221,535
Heavy	47,485	47,158	57,137	47,158	57,137
California:					
Light	26,898	25,301	33,548	25,301	33,548
Heavy**	90,516	91,695	88,092	91,695	88,092
Total crude	433,116	441,926	400,312	441,926	400,312
Natural-gas gasoline at plants	971	992	631	992	631
Total refined	129,379	128,500	123,563	128,500	123,563
Grand total stocks all oils	563,466	571,418	524,506	571,418	524,506
Bunker oil (included above in domestic demand	4,244	4,077	3,940	28,176	26,147

*Revised. †Decrease. ‡Includes shipments to noncontinguous territories. §Exclusive of producers' stocks. **Includes fuel oil.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY

(Barrels of 42 U. S. gallons.)

FIELD:	June, 1927 Total	June, 1927 Daily Av.	July, 1927 Total	July, 1927 Daily Av.	Jan.-July, 1927	Jan.-July, 1926*
Appalachian	2,596,000	86,600	2,647,000	82,100	17,578,000	16,349,000
Lima-Indiana	171,000	5,700	155,000	5,000	1,109,000	1,219,000
Michigan	41,000	1,300	37,000	1,200	253,000	18,000
Ill.-S. W. Ind.	661,000	22,000	634,000	20,500	4,550,000	4,917,000
Mid-Continent	45,175,000	1,505,900	48,824,000	1,575,000	309,162,000	231,234,000
Gulf Coast	4,163,000	138,800	4,056,000	130,800	29,890,000	20,134,000
Rocky Mountain	2,550,000	85,000	2,761,000	89,100	18,343,000	23,146,000
California	19,181,000	639,300	19,319,000	623,200	135,504,000	128,886,000
U. S. total	74,538,000	2,484,600	78,333,000	2,526,900	516,389,000	†425,903,000
STATE:						
Arkansas	3,328,000	110,900	3,322,000	107,200	24,943,000	36,017,000
California	19,181,000	639,300	19,319,000	623,200	135,504,000	128,886,000
Colorado	217,000	7,200	241,000	7,800	1,697,000	1,539,000
Illinois	600,000	20,000	574,000	18,500	4,149,000	4,535,000
Indiana	74,000	2,400	70,000	2,300	481,000	473,000
Southwestern	61,00	2,000	60,000	2,000	401,000	382,000
Northeastern	13,000	400	10,000	300	80,000	91,000
Kansas	3,432,000	114,400	3,353,000	108,200	24,377,000	23,660,000
Kentucky	558,000	18,600	588,000	19,000	3,803,000	3,629,000
Louisiana	1,652,000	55,100	1,846,000	59,500	12,336,000	13,408,000
Gulf Coast	230,000	7,700	252,000	8,100	1,801,000	2,430,000
Rest of state	1,422,000	47,400	1,594,000	51,400	10,535,000	10,978,000
Michigan	41,000	1,300	37,000	1,200	253,000	18,000
Mon.ana	474,000	15,800	466,000	15,000	3,069,000	4,857,000
New Mexico	90,000	3,000	85,000	2,800	829,000	910,000
New York	188,000	6,300	184,000	5,900	1,280,000	1,103,000
Ohio	665,000	22,200	627,000	20,200	4,460,000	4,235,000
Cent. and East.	507,000	16,900	482,000	15,500	3,431,000	3,107,000
Northwestern	158,000	5,300	145,000	4,700	1,029,000	1,128,000
Oklahoma	23,519,000	784,000	26,861,000	866,500	155,817,000	99,445,000
Osage County	2,025,000	67,500	1,953,000	63,000	14,557,000	14,267,000
Rest of state	21,494,000	716,500	24,908,000	803,500	141,260,000	85,178,000
Pennsylvania	830,000	27,700	797,000	25,700	5,542,000	5,087,000
Tennessee	4,000	100	5,000	200	30,000	26,000
Texas	17,467,000	580,300	17,498,000	564,400	121,579,000	78,838,000
Gulf Coast	3,933,000	131,100	3,804,000	122,700	28,089,000	17,704,000
Rest of state	13,474,000	449,200	13,694,000	441,700	93,490,000	61,134,000
West Virginia	509,000	17,000	491,000	15,800	3,492,000	3,397,000
Wyoming	1,769,000	59,000	1,969,000	63,500	12,748,000	15,835,000
Salt Creek	1,267,000	42,200	1,318,000	42,500	8,908,000	11,288,000
Rest of State	502,000	16,800	651,000	21,000	3,840,000	4,547,000
CLASSIFICATION BY GRAVITY (approx.):						
Light crude	65,335,000	2,177,800	68,866,000	2,221,500	449,938,000	349,799,000
Heavy crude	9,203,000	306,800	9,467,000	305,400	66,451,000	76,104,000

*Final figures; total includes approximately 2,000,000 bbls. consumed on leases, etc., not included in 1927 figures. †Includes Alaska and Utah.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES

AT REFINERIES (and in coastwise transit thereto) Reported by location of storage:		June 30, 1927	July 31, 1927	July 31, 1926*
East Coast—Domestic		8,720,000	8,999,000	8,582,000
Foreign		2,909,000	2,671,000	3,092,000
Appalachian		1,668,000	1,785,000	1,722,000
Indiana, Illinois, etc.		2,507,000	2,561,000	1,881,000
Oklahoma, Kansas, etc.		4,413,000	4,428,000	3,081,000
Texas—Inland		1,304,000	1,450,000	1,133,000
Gulf Coast—Domestic		6,961,000	6,657,000	6,627,000
Foreign		242,000	226,000	416,000
Arkansas and inland Louisiana		431,000	454,000	572,000
Louisiana Gulf Coast—Domestic		4,037,000	4,559,000	6,664,000
Foreign		1,282,000	1,373,000	1,089,000
Rocky Mountain		1,293,000	1,382,000	1,500,000
Total east of California		35,767,000	36,545,000	36,359,000
ELSEWHERE THAN AT REFINERIES:				
Domestic—Reported by field of origin:				
Appalach an:				
N. Y., Pa., W. Va., Eastern and Central Ohio:	Gross	7,009,000	7,129,000	7,269,000
	Net	6,733,000	6,855,000	6,984,000
Kentucky:	Gross	1,468,000	1,324,000	1,773,000
	Net	1,343,000	1,198,000	1,668,000
Lima-Indiana:	Gross	1,019,000	1,099,000	973,000
	Net	820,000	900,000	771,000
Illinois-S. W. Indiana:	Gross	12,198,000	12,669,000	12,212,000
	Net	11,712,000	12,184,000	11,731,000
Mid-Continent:				
Oklahoma, Kansas, Central, North and West Texas:	Gross	197,239,000	205,920,000	148,116,000
	Net	185,376,000	194,085,000	135,445,000
North Louisiana and Arkansas:	Gross	30,904,000	31,358,000	41,239,000
	Net	28,191,000	27,792,000	38,815,000
Gulf Coast:	Gross	18,636,000	18,106,000	16,395,000
	Net	18,257,000	17,696,000	16,003,000
Rocky Mountain:	Gross	27,253,000	27,434,000	30,577,000
	Net	27,199,000	27,377,000	30,527,000
TOTAL pipe line and tank farm stocks east of California:	Gross	295,726,000	305,039,000	258,554,000
	Net	279,631,000	288,087,000	241,944,000
Foreign crude petroleum on Atlantic Coast		67,000	42,000	70,000
Foreign crude petroleum on Gulf Coast		237,000	256,000	299,000
		304,000	298,000	369,000
TOTAL refinery, pipe line and tank farm stocks of domestic and foreign crude petroleum east of California		315,702,000	324,930,000	278,672,000
CLASSIFICATION BY GRAVITY (approx.):				
East of California:				
Light crude (24° and above)		268,217,000	277,772,000	221,535,000
Heavy crude (below 24°)		47,485,000	47,158,000	57,137,000
California—Light		26,898,000	25,301,000	33,548,000
Heavy (including fuel)		90,516,000	91,695,000	88,092,000

*Final figures.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (BARRELS)

(From Bureau of Foreign and Domestic Commerce)

	June, 1927 Total	June, 1927 Daily Av.	July, 1927 Total	July, 1927 Daily Av.	Jan.-July, 1927	Jan.-July, 1926*
Imports	4,019,000	134,000	4,675,000	150,800	30,443,000	36,810,000
From Mexico	2,733,000	91,100	2,825,000	91,100	15,716,000	27,104,000
From Venezuela	896,000	29,900	1,160,000	37,400	8,691,000	6,423,000
From Colombia	180,000	6,000	542,000	17,500	4,218,000	367,000
From other countries	210,000	7,000	148,000	4,800	1,818,000	2,716,000
Exports	1,410,000	47,000	1,089,000	35,100	8,628,000	9,299,000
Domestic crude oil:						
To Canada	1,191,000	39,700	894,000	28,800	7,117,000	7,618,000
To other countries	219,000	7,300	195,000	6,300	1,511,000	1,680,000
Foreign crude oil	.....	.....	.....	.....	.....	1,000

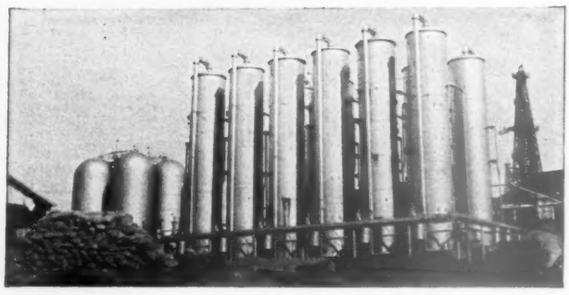
NOTE—No shipments to territories during July, 1927.

NUMBER OF PRODUCING OIL WELLS COMPLETED†

June, 1927	July, 1927	Jan.-July, 1927	Jan.-July, 1926*
1,248	1,275	9,469	10,139

†For states east of California, from The Oil and Gas Journal; for California, from the American Petroleum Institute.

(Continued on Page 82)



Here's Proof

Campbell Installations Increase Gasoline Production

Instances where Campbell "Oil-Froth" Absorbers have replaced other makes of Absorbers.*

Case	Production previous to change. Gallons per day	Production after change. Gallons per day
A	8,600	13,100
B	19,300	26,000
C	11,500	20,000
D	10,000	11,900
E	6,000	7,100
F	8,000	8,900
G	6,300	7,400
H	5,900	6,500
I	56,000	63,000
J	2,900	3,500
K	4,300	5,100
L	5,200	6,100

*Names and locations of Plants upon request.

New Catalog Ready Sept. 10.

J. A. Campbell

Consulting—Designing—Constructing

Natural Gas Engineer

P. O. Box 669 LONG BEACH, CALIF.

CAMPBELL OIL FROTH absorber

TO NAME COMMITTEE ON OIL LEGISLATION

(Continued from Page 32)

Congress among other recommendations it may see fit to pass, he said, an amendment to the leasing laws as applied to public land and restricted Indian lands. The mineral section then unanimously adopted the Campbell resolution and in due time it will go before the American Bar Association.

H. O. Caster, formerly of Kansas and now of New York, in commenting upon the general proposition for legislation, stated that he did not know how far a state can go under its police powers in regulating the oil industry.

"They have gone further than I supposed they could go in some instances and the courts have upheld them. A number of states have laws prohibiting the use of natural gas for a number of purposes one of which is for use in the manufacture of carbon black.

"I think the public generally is not much interested in conservation of oil in order that the producers may get more for their oil but is interested if conservation may give them oil products for a long time and at a better price.

"It has been found," said Mr. Caster, "that gas dissolves the oil in the ground and that reduces the viscosity, makes it thin, and it has been found by experiment that water pressure is not as efficient as gas pressure for the reason stated.

"Just how far we may go in legislation for control of production is a matter of careful study."

The mineral section adjourned subject to call of the chairman.

SILVER ANNIVERSARY MEETING OF N. P. A.

(Continued from Page 30)

Fritter, H. H. Greene, T. J. Hilliard, O. P. Keeney, H. A. Logan, E. M. Lyons, H. W. Scott, B. B. Strond, P. S. Tarbox, R. A. Wotowitch.

The presidents of the association since its organization have been: H. A. Jamieson from 1902 to 1903; W. E. Wall of Cleveland, Ohio, from 1903 to 1912; William Muir of Warren, Pa., from 1912 to 1917; Paul Messer of Oil City, Pa., from 1917 to 1919; E. G. Lyon from 1919 to 1924; O. P. Keeney of New York City, from 1924 to 1927. All of the foregoing are living at this time except Mr. Jamieson and Mr. Lyons.

Of the original 19 company members 15 are still in business and members of this association. That is certainly a record of longevity for its companies that has seldom been equaled in an industry. Of the remaining four companies two have been absorbed by other companies. Of the remaining two the plant of one was destroyed by fire about a year ago and the plant of the other was operated until a few months ago.

Reforms Secured

Railroad rebates had been a subject for dissension from the earliest day of the oil industry. In the beginning every man got the best rate he could and if he got a better rate than another that was his good luck. But it was not long before the thought became dominant that prosperity was largely dependent upon the favor shippers received from railroads. The more traffic, and especially the more regular traffic that could be offered by a shipper, the better he could expect in the fixing of his transportation charge.

When the National Petroleum Association was organized alleged discrimination in railroad rates formed the chief topic of discussion and the independent refiners determined they would carry on warfare to assure themselves the best rates and break up every semblance of discrimination. When the legal staff of the National Petroleum Association was organized in 1906 the great subject to which it gave its attention was the transportation situation.

The cases brought before the Interstate Commerce Commission numbered more than 140 and the transportation question was greatly clarified during those contests. It seems quite safe to say that today any discrimination between shippers of petroleum and its products is unknown beyond classes of discrimination that are involved in different hauls and in questions of classification that in their very nature must continue to persist and be the subject for discussion from time to time. However, discrimination, as it was thought of in the early days, has disappeared so completely that no one will believe that today any shipper of petroleum will ever attempt to seek a discriminatory rate against his competitor. That is a condition for which the National Petroleum Association has taken a great deal of credit as its activities were unceasing.

In 1910 the association organized the National Petroleum Mutual Fire Insurance Co. This company has been a large factor in reducing premiums demanded for insurance on oil properties. It has paid over $2,000,000 in fire losses and has now a membership among refineries and marketers of more than 650.

Varied Activities

Among the subjects dealt with by the association, aside from freight rate cases, have been numerous questions arising out of private ownership of tank cars, rules of the Master Car Builders' Association, regulation for the transportation of hazardous oil products, estimated weight of petroleum production, etc.

The genius of this association that has worked out its salvation is shown by the fact that its members are still competitors, but they have learned that team work is the work that tells in the long run. Their kind of team work has meant candor and integrity and an abandonment of suspicion and attempted secrecy in respect to methods of doing their business in all of its aspects. This applies especially to methods of refining. The day when a refiner guarded his works as if everyone was attempting to steal his methods has gone.

Perhaps the United States Government has had a great deal to do with broadening the vision of refiners large and small. The United States Bureau of Mines in its practical work of investigation has laid before everybody many facts concerning petroleum and methods of handling it, as well as methods of refining.

The United States Bureau of Standards has also contributed vastly to a knowledge of petroleum, both its nature and methods of handling it.

But in spite of everything that can be said as to outside influences that assisted in the development of the work of the National Petroleum Association there is still the fact that that group of men who organized in 1902 developed a splendid tradition for the promotion of mutual understanding between its members and the formation of friendships between its competitors. That was no trifling undertaking.

NEW RUSSIAN DEPOSITS BEING INVESTIGATED

The Azneft oil trust has begun surveying new deposits on the western shores of Caspian Sea, south of Baku, and on the islands of Artem and Zhiloy, near the Apsheron peninsula. The volcanoes on the eastern shore of the Caspian are also to be investigated. The Grozneft trust is prospecting for oil in a considerable area on the western shore of the Caspian, where seven wells are being drilled.

The construction of the new oil refining works in Batum is nearing completion. All pumps are installed and pipes within the plant are laid. Operation is expected to commence in September.

Two new gushers have been reported from the new Grozny fields. An oil-yielding well is said to have been discovered in the Eldar region in Georgia.

NEW EUROPEAN TANKERS

Some 150 oil tankers have been ordered or are under construction in British and Continental yards, of which 75 per cent are to be fitted with oil engines.

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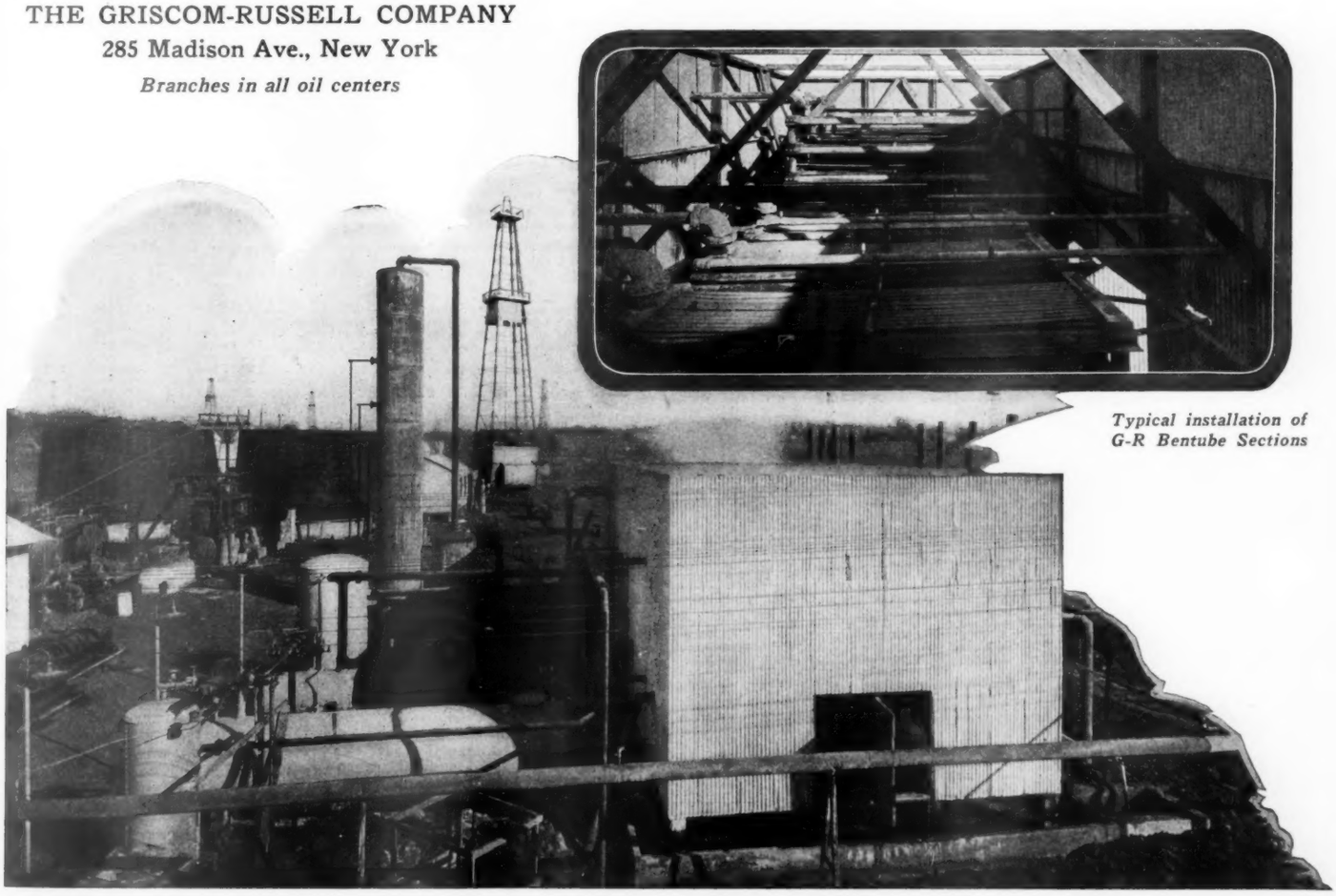

Typical installation of G-R Bentube Sections

GOVERNMENT PETROLEUM STATISTICS FOR JULY

(Continued from Page 79)

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (BARRELS)

	June, 1927 Total	June, 1927 Daily Av.	July, 1927 Total	July, 1927 Daily Av.	Jan.-July, 1927	Jan.-July, 1926*
Domestic petroleum by fields of origin:						
Appalachian	2,500,000	83,300	2,570,000	82,900	17,315,000	16,230,000
Lima-Indiana	122,000	4,100	75,000	2,400	875,000	1,422,000
Michigan	41,000	1,400	37,000	1,200	253,000	18,000
Ill. & S. W. Ind.	678,000	22,600	162,000	5,200	4,136,000	3,774,000
Mid-Continent	36,187,000	1,206,200	40,514,000	1,306,900	261,133,000	253,933,000
Gulf Coast	3,979,000	132,600	4,617,000	149,000	32,225,000	23,389,000
Rocky Mountain	2,451,000	81,700	2,583,000	83,300	19,041,000	21,524,000
Deliveries, exports	45,958,000	1,531,900	50,558,000	1,630,900	334,978,000	320,281,000
Deliveries	45,068,000	1,502,300	49,845,000	1,607,900	328,483,000	314,337,000
Foreign petroleum	4,001,000	133,300	4,681,000	151,000	30,754,000	36,847,000
Deliveries domestic and foreign petroleum	49,069,000	1,635,600	54,526,000	1,758,900	360,237,000	†351,184,000

†Includes Alaska and Utah.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES

(Barrels)

	June, 1927	July, 1927	Jan.-July, '27	Jan.-July, '26*
Crude oil	1,247,000	1,124,000	5,966,000	8,194,000
Refined products	1,693,000	1,862,000	13,716,000	12,098,000
Gasoline	1,043,000	1,133,000	6,503,000	4,709,000
Tops	.....	.....	.....	71,000
Gas oil	236,000	315,000	2,261,000	3,153,000
Fuel oil	255,000	413,000	4,807,000	3,886,000
Lubricants	69,000	1,000	145,000	279,000

*Final figures.

COMPARATIVE ANALYSIS

(Thousands of barrels of 42 U. S. gallons)

	Production* Ttl.	Production* Dly. av.	Imports† T. I.	Imports† D. av.	Exp'tst Ttl.	Exp'tst D. av.	Stocks end of period	Dom. dem. Ttl.	Dom. dem. D. av.
CRUDE PETROLEUM:									
June, 1927	68,022	2,267	4,019	134	1,410	47	‡315,702	.....	....
July, 1927	71,901	2,319	4,675	151	1,089	35	‡324,930	.....	....
Jan.-July, 1927	479,416	2,261	30,443	144	8,628	41	‡324,930	.....	....
July, 1926	67,335	2,172	5,185	167	1,726	56	‡278,672	.....	....
Jan.-July, 1926	439,223	2,072	36,810	174	9,299	44	‡278,672	.....	....
GASOLINE:									
June, 1927	26,616	887	590	20	4,248	142	43,768	27,799	927
July, 1927	28,118	907	190	6	3,223	104	39,069	29,084	961
Jan.-July, 1927	188,968	891	3,076	15	25,873	122	39,069	166,125	784
July, 1926	25,504	823	427	14	3,702	119	38,289	24,719	797
Jan.-July, 1926	168,352	794	2,946	14	25,933	122	38,289	145,951	688
KEROSENE:									
June, 1927	4,308	144	2	...	1,616	54	8,567	2,695	90
July, 1927	4,484	145	.....	...	1,376	44	9,038	2,637	85
Jan.-July, 1927	32,431	153	8	...	10,852	51	9,038	21,124	100
July, 1926	4,877	157	21	...	1,613	52	8,434	2,732	88
Jan.-July, 1926	35,517	168	30	...	11,920	56	8,434	22,314	105
LUBRICANTS:									
June, 1927	2,571	86	1	...	758	25	7,628	2,197	73
July, 1927	2,672	86	149	5	993	32	7,496	1,960	63
Jan.-July, 1927	18,152	86	382	2	5,756	27	7,496	12,858	61
July, 1926	2,831	91	1	...	746	24	7,328	2,072	67
Jan.-July, 1926	18,809	89	25	...	5,631	27	7,328	13,128	62
WAX (thousands of pounds):									
June, 1927	44,938	1,498	400	13	24,200	807	198,808	29,659	989
July, 1927	47,979	1,548	2,789	90	25,970	838	191,501	32,105	1,036
Jan.-July, 1927	343,222	1,619	8,841	42	181,875	858	191,501	164,018	774
July, 1926	54,267	1,751	2,089	67	30,768	993	156,704	24,138	779
Jan.-July, 1926	375,482	1,771	5,516	26	196,370	926	156,704	144,315	681
GAS OIL AND FUEL OIL:									
June, 1927	31,691	1,056	851	28	4,278	143	26,590	.....	....
July, 1927	33,693	1,087	849	27	4,047	131	28,890	.....	....
Jan.-July, 1927	226,237	1,067	5,569	26	27,395	129	28,890	.....	....
July, 1926	31,461	1,015	1,485	48	2,427	78	25,696	.....	....
Jan.-July, 1926	205,899	971	9,252	44	21,155	100	25,696	.....	....

*Figures in this column for crude petroleum are runs to stills. †From Bureau of Foreign and Domestic Commerce, subject to revision. Exports, except for wax, include shipments to Alaska, Hawaii and Porto Rico. ‡East of California.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, JULY, 1927

	Crude Oil Domestic	Crude Oil Foreign	Unfinished oils	Natural-gas gasoline	Total oils Runs to stills (bbls.)
East Coast	9,296,000	3,222,000	991,000	127,000	13,636,000
Appalachian	2,384,000	.....	75,000	50,000	2,509,000
Indiana, Illinois, etc.	7,068,000	.....	519,000	175,000	7,762,000
Oklahoma, Kansas, etc.	9,227,000	.....	238,000	366,000	9,831,000
Texas	14,130,000	51,000	302,000	485,000	14,968,000
Louisiana and Arkansas	5,044,000	562,000	126,000	443,000	6,175,000
Rocky Mountain	2,139,000	.....	474,000	91,000	2,704,000
California	18,778,000	.....	*217,000	629,000	19,624,000
United States total	68,066,000	3,835,000	2,942,000	2,366,000	77,209,000
Daily average, 7/27	2,195,700	123,700	94,900	76,300	2,490,600
Daily average, 6/27	2,146,100	121,300	105,000	66,400	2,438,800
Texas Gulf Coast	10,859,000	51,000	270,000	391,000	11,571,000
Louisiana Gulf Coast	3,391,000	562,000	1,000	363,000	4,317,000

Output and losses—	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oils (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	3,915,000	866,000	6,232,000	832,000	20,187,000
Appalachian	997,000	316,000	553,000	358,000	6,011,000
Indiana, Illinois, etc.	4,009,000	530,000	1,953,000	316,000	6,076,000
Oklahoma, Kansas, etc.	4,913,000	771,000	3,165,000	196,000	3,667,000
Texas	5,932,000	1,025,000	6,020,000	668,000	4,721,000
Louisiana and Arkansas	2,090,000	436,000	2,373,000	55,000	3,589,000
Rocky Mountain	1,196,000	169,000	590,000	50,000	3,728,000
California	5,066,000	371,000	12,807,000	197,000	.....
United States Total	28,118,000	4,484,000	33,693,000	2,672,000	†47,979,000
Daily average, 7/27	907,000	144,600	1,086,500	86,200	1,547,700
Daily average, 6/27	887,200	143,600	1,056,400	85,700	1,477,900
Texas Gulf Coast	4,633,000	843,000	4,524,000	633,000	4,395,000
Louisiana Gulf Coast	1,658,000	376,000	1,260,000	55,000	3,589,000

Output and Losses (cont.)—	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Losses (b ls.)
East Coast	10,700	175,700	121,000	111,000	466,000
Appalachian	1,800	700	32,000	84,000	132,000
Indiana, Illinois, etc.	25,700	27,300	114,000	233,000	298,000
Oklahoma, Kansas, etc.	16,100	400	78,000	166,000	441,000
Texas	19,700	21,200	11,000	374,000	707,000
Louisiana and Arkansas	11,900	58,900	155,000	517,000	155,000
Rocky Mountain	4,500	3,800	16,000	565,000	54,000
California	.....	46,700	220,000	*440,000	263,000
United States total	†90,400	†334,700	747,000	2,490,000	2,516,000
Daily average, 7/27	2,920	10,800	24,100	80,300	81,200
Daily average, 6/27	3,180	11,570	22,570	76,100	82,900
Texas Gulf Coast	17,100	21,200	2,000	144,000	572,000
Louisiana Gulf Coast	10,700	57,700	149,000	388,000	53,000

*Includes 82,000 barrels net tops produced. †Wax, coke, and asphalt equivalent to 278.9 pounds per barrel and 5.09 and 5.55 barrels per ton, respectively; corrected figure for wax, June, 282.6.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, JULY, 1927

(Barrels)

	Straight run	%	Cracked	%	Natural-gas gasoline	%	Total
East Coast	2,449,000	63	1,339,000	34	127,000	3	3,915,000
Appalachian	718,000	72	229,000	23	50,000	5	997,000
Indiana, Illinois, etc.	2,176,000	54	1,658,000	41	175,000	5	4,009,000
Oklahoma, Kansas, etc.	3,054,000	62	1,493,000	30	366,000	8	4,913,000
Texas	2,993,000	51	2,454,000	41	485,000	8	5,932,000
Louisiana and Arkansas	1,063,000	51	584,000	28	443,000	21	2,090,000
Rocky Mountain	664,000	55	441,000	37	91,000	8	1,196,000
California	4,004,000	79	157,000	3	*905,000	18	5,066,000
United States total	17,121,000	61	8,355,000	30	2,642,000	9	28,118,000
United States total 6/27	16,344,000	61	7,957,000	30	2,315,000	9	26,616,000
Gulf Coasts	2,877,000	46	2,660,000	42	754,000	12	6,291,000

*Includes natural-gas gasoline run through pipe lines.

STOCKS HELD BY THE REFINING COMPANIES IN UNITED STATES JULY 31, 1927

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil fuel oil (bbls.)	Lubricants (bbls.)
East Coast	6,615,000	1,789,000	8,917,000	2,553,000
Appalachian	833,000	336,000	896,000	952,000
Indiana, Illinois, etc.	4,664,000	919,000	1,545,000	675,000
Oklahoma, Kansas, etc.	3,158,000	642,000	5,241,000	413,000
Texas	5,829,000	1,710,000	8,372,000	1,796,000
Louisiana and Arkansas	2,162,000	1,396,000	3,272,000	108,000
Rocky Mountain	3,970,000	322,000	647,000	122,000
California	11,838,000	1,924,000	.....	877,000
United States total	39,069,000	9,038,000	*28,890,000	7,496,000
United States total 6/30/27	43,768,000	8,567,000	*26,590,000	7,628,000
Texas Gulf Coast	5,107,000	1,332,000	6,790,000	1,753,000
Louisiana Gulf Coast	2,050,000	1,357,000	2,672,000	108,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East Coast	89,984,000	32,400	87,800	123,000	7,028,000
Appalachian	22,058,000	500	2,500	110,000	1,206,000
Indiana, Ill., etc.	16,654,000	19,300	27,300	136,000	3,648,000
Oklahoma, Kans., etc.	8,814,000	55,400	1,400	142,000	2,552,000
Texas	10,859,000	63,400	8,400	10,000	9,888,000
Louisiana and Ark.	30,354,000	63,900	22,100	43,000	‡2,625,000
Rocky Mountain	12,691,000	70,900	10,300	24,000	2,115,000
California	87,000	.....	54,300	340,000	†10,585,000
U. S. total	191,501,000	305,800	214,100	928,000	39,647,000
U. S. total 6/30/27	198,808,000	293,100	232,400	1,180,000	38,192,000
Texas Gulf Coast	10,793,000	55,100	8,400	3,000	9,104,000
Louisiana Gulf Coast	30,354,000	61,700	22,000	38,000	2,203,000

*East of California. ‡Includes 3,143,000 bbls. tops in storage.

Natural-Gas Gasoline, July, 1927

The production of natural-gas gasoline again showed a decline in July, 1927, when the total amounted to 131,000,000 gallons, a daily average of 4,230,000 gallons. This represents a decrease in daily average production of 100,000 gallons from the previous month, and is 210,000 gallons below the record established in April, 1927. The July, 1927, production was 19 per cent higher than that of the previous year, however. Stocks of raw natural-gas gasoline on hand at the plants continued to increase and at the end of the month amounted to 41,670,000 gallons, an increase over June stocks of nearly 1,000,000 gallons. This increase was less than that of the previous month, due to increased blending at refineries.

(Thousands of gallons)

	Natural-gas gasoline Production* June, 1927	Production* July, 1927	Production* July, 1926	Stocks end of June, 1927	Stocks end of July, 1927	Blended motor fuel July, 1927 (1)	(2)	(3)
Appalachian	5,800	5,400	5,200	3,883	3,047	296	148	284
Ind., Ill., etc.	1,100	1,100	1,200	502	501	23	4	16
Okla., Kans., etc.	47,200	48,200	42,300	19,041	20,010	2,104	4,350	686
Texas	25,400	25,500	18,400	13,877	15,243	512	781	241
Louisiana and Ark.	8,800	7,000	6,500	1,702	1,004	235	252	169
Rocky Mountain	4,200	4,100	3,600	553	541	84	31	132
Total east California	90,500	91,300	77,200	39,558	40,346	3,164	5,566	1,527
California	39,400	39,700	33,200	1,209	1,324	Not available		1
Total United States	129,900	131,000	110,400	40,767	41,670	.....	.....	1,528
Daily average	4,330	4,230	3,560	.....	.....	.....	.....	.....

(1) Natural-gas gasoline used. (2) Naphtha or other oils used. (3) Stocks end of month. *Approximately 97 per cent net production; 3 per cent gross.

The indicated output of motor fuel from the above and other sources may be expressed by the following table:

(Thousands of gallons)

	June, 1927	July, 1927	July, 1926
Total gasoline produced at refineries *†	1,117,900	1,181,000	1,071,200
Raw gasoline blended at plants east of California	3,300	3,200	2,600
Raw gasoline sold direct to jobbers (estimated)	800	800	800
Benzol production‡	§8,800	9,000	7,500
Total motor fuel produced	§1,130,800	1,194,000	1,082,100
Daily average	37,700	38,500	34,900
*Includes natural-gas gasoline blended at refineries	83,600	99,400	77,900
†Includes na.ural-gas gasoline run through refinery pipe lines in California	13,700	11,600	12,100

‡Estimated with production of by-product coke as a basis. §Revised.

OIL IN SOUTH AFRICA

According to the Cape Times of Cape Town, the engineers of the Devon Petroleum Prospecting Syndicate visited an outlying block of the syndicate's farms to investigate the reported occurrences of petroleum in certain boreholes which were put down about six years ago by a party in search of coal. The logs showed that in five of the wells sandstone carried free petroleum. On the advice of its experts the syndicate put down another borehole in this area, and according to the latest official report five oil sands have been encountered. A sample of the core pulled up from a depth of 202 feet has been brought to Johannesburg for analysis. An official statement is to the effect that the core is saturated with crude oil, but that a natural flow can not reasonably be expected short of 500 feet. It adds that the oil of the region will probably prove to be a light paraffin oil of low viscosity.

J. B. PHILLIPS DIES

MEADVILLE, Pa., Sept. 3.—J. B. Phillips, an old-time operator and refiner, died at the home of his daughter, Mrs. W. C. Slusser, at Casey, Ill., on August 25 and was buried at Waterford, Pa. One son, H. B. Phillips, of Norman, Okla., survives.

Mr. Phillips was born April 1, 1856, at New Richmond, Crawford County, and was interested largely in both the early Pennsylvania and New York fields, also in Ohio and Indiana, and went from there to Illinois, where he built and operated an oil refinery for a number of years, then known as Leader Oil Co. He was also interested in the Old Texas City Refining Co. at Texas City, Tex., and the Cornplanter Refining Co. at Warren, Pa. He was a pioneer operator in Oklahoma, being one of the original owners of the Cherokee Oil & Gas Co., and drilled the first shallow wells in what is now Rogers County, the first Bartlesville shallow sand wells.

A CHAIN—

An old maxim adds, is no stronger than its weakest link.

Each link of a set of Spang Weldless Jars is an endless weldless unit of special alloy steel, forged integral with its mate and then carefully heat treated.

A pair of equal weldless links.

Are you using the strongest jars made today?

Spang and Company

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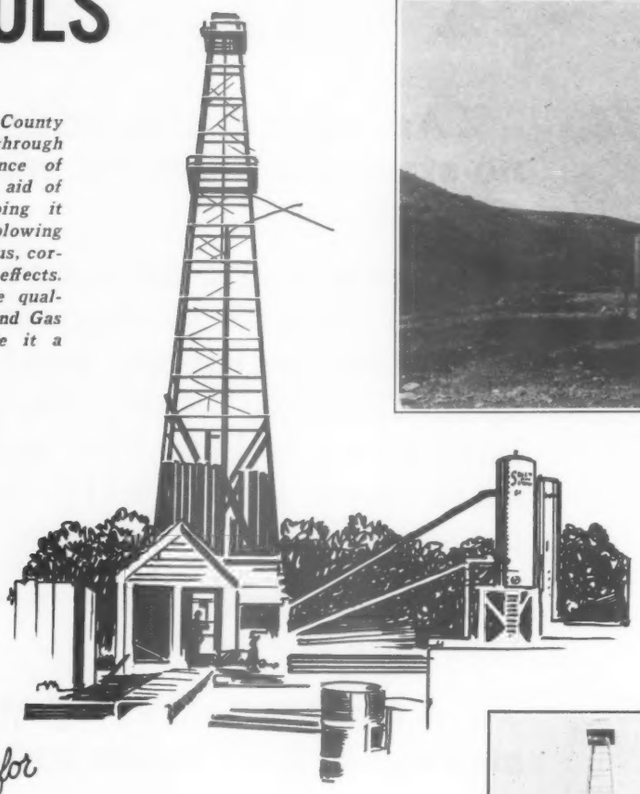
Sold by All Leading Supply Houses

AGAIN SMITH SEPARATORS SAFEGUARD NEW POOLS

Wells in the Pecos County field, Texas, are flowed through separators. The presence of sulphur gas invites the aid of the separator in keeping it under control and from blowing into the air with injurious, corrosive and poisonous effects. The sturdy and durable qualities of the Smith Oil and Gas Separator has made it a favorite.



In the picture above is shown a Smith Separator on the discovery well in the Pecos field. It is significant that the Smith Separator was considered of such importance by this producer that he got it on location along with his other equipment in spite of the extreme difficulties that characterize this field.

If it's worth drilling for it's worth saving

The common sense operator "closes the stable door before the horse leaves." The Smith Oil and Gas Separator is a part of their standard equipment, as indispensable as a derrick or a string of drilling tools. It is customarily set in readiness before the well comes in. In the photographs shown here of the discovery wells of Pecos and Little River, the Smith Separator was on the job before oil was struck. It was in readiness as a common sense precaution that no production losses would occur.

There is a type of Smith Oil and Gas Separator for every service—a size for every production need.

Above is shown Smith Separators at the I. T. I. O. Little River Pool discovery well, Seminole field.

SMITH SEPARATOR COMPANY

Tulsa Okla.

NEW YORK OFFICE:
Export Representative:
Oil Field Equipment Co.,
30 Church St., New York
Cable Address
"Oilfields," New York

CALIFORNIA OFFICE:
2039 East 38th St.,
Los Angeles, Calif.

TEXAS OFFICES:
924 Post Dispatch Bldg.,
Houston, Texas
1402 Ft. Worth Nat'l Bank Bldg.,
Fort Worth, Texas

LOUISIANA OFFICE:
405 Forest Ave.,
Shreveport, La.

LONDON OFFICE:
Perkins MacIntosh Petroleum Tool & Boring Co., Ltd.,
25 Bishopsgate,
Cable Address
"Oleborers," London

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

GRAY COUNTY

Amogray Oil Co.'s No. 1 A. Chapman, SW NW SW, Sec. 9, Blk. 26, H. & G. N. Sur. — Drlg., 1,450 ft.

Atlantic O. P. Co.'s No. 1 Combs & Worley, NW cor. NE Sec. 39, Blk. 3 — T.D., 3,085 ft; shot 560 qts., 2,-947-3,052 ft; sprayed 30 bbls. 24 hrs. and went dead; T.D., 3,-165 ft; 6-in. set, 3,150 ft; drlg., 3,365 ft.

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B — Spudded and S.D.

Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25 — Shot with 300 qts., 2,720-2,815 ft; T.D., 3,005 ft., bridged and spraying 10 bbls. per day, C.O.

Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B — Killed gas, fish. for bit, 2,668 ft.

British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 — Rigged and S.D.; temp. abd.

Camel Oil Co.'s No. 1 Harrah, Sec. 163, Blk. 3, I. & G. N. Sur. — Fish., 650 ft.

Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17 Blk. 1 — S.D., 3,860 ft.

Danciger et al's No. 1 Jackson, NW cor. Sec. 88, Blk. B-2 — Set 8-in. at 2,477 ft; C.O.

Donley Gray Oil Co.'s No. 1 J. W. Gordon, Sec. 79, Blk. 3 — Drlg., 2,635 ft.

Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 — Rig.

Edwards et al's No. 1 E. J. Case, NE cor. Sec. 182, Blk. B-2, H. & G. N. Sur. — Cmt. 12-in. at 1,340 ft; drlg., 1,-800 ft.

Empire G. & F. Co.'s No. 1 J. E. Cubine, NE cor. NW Sec. 36, Blk. 25 — 6,000,000 ft. gas, 2,342-60 ft; top granite wash, 2,397 ft; set 8-in. pipe, 2,472 ft; drlg., 3,349 ft; 2 bailers water, 3,300-20 ft; 2½ bailers water per hr., 3,505 ft; P.B. to 2,740 ft; shot with 150 qts. at 2,712-50 ft; made 45 bbls. in 3 days; to shoot again.

Empire G. & F. Co.'s No. 1 Sarah George, Sec. 151, Blk. 3, I. & G. N. Sur. — Spud.

Empire G. & F. Co.'s No. 1 I. B. Hughey — To drill deeper from 3,225 ft.

Empire G. & F. Co.'s No. 1 J. M. Saunders, SW cor. SE Sec. 40, Blk. 3 — Shot with 240 qts., 3,050-3,113 ft; bridged and C.O. and making 5 bbls.

Lefors Pet. Co.'s No. 1 Leach, Lefors Townsite — Fish., 1,405 ft.

Gladis Gray's No. 1 Colebank-Morse (was Foster et al's No. 1 G. Cutebank), SW cor. NE Sec. 65, Blk. 25 — 2,905 ft., T.D; plugged back to 2,803 ft; shot 160 qts, 2,430-2,-510 ft; 1,2(0 ft. oil in hole; bailed dry; shot 600 qts., 2,479-2,525 ft; C.O; swabbing 25 bbls. daily.

Gulf Prod. Co.'s No. 1 Bowers, Sec. 29, Blk. B-2 — Drlg. granite wash, 2,848 ft; 1,-500,000 ft. of gas.

Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk 3 — Hole full salt water, 3,420 ft; S. D., 3,535 ft.

Gray County Pet Co.'s No. 1 A. Chapman, Sec. 70, Blk. 25 — Swabbed 180 bbls. 18 hrs. from granite wash, 2,840-52 ft; S.D. for storage.

Neudigate et al's No. 1 A. Chapman, NE cor. E half SE Sec. 52, Blk. 25 — Drlg., 2,665 ft; 500,000 ft. gas, 2,-760-65 ft; rainbow of oil, 2,820-25 ft; salt water; S.D., granite wash, 2,827-28 ft, repairing rig.

Operators Oil Co.'s No. 1 Bowers, NE cor., Sec. 35, Blk. 3, I. & G. N. Sur. — Drlg., 2,050 ft.

Midwest Explin. Co.'s No. 1 J. A. Hood, SE cor. SW, Sec. 33, Blk. 3, I. & G. N. Sur. — Drlg., 2,230 ft.

Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3 — Drlg. red rock, 2,705 ft.

Pampa Pet Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3 — Water, 3,230-60 ft; slight oil show in granite wash, 3,572-75 ft; S. D., 3,700 ft.

Purple Sage Oil Co.'s No. 1 Johnson, Sec. 8, Rockwell County School land — First oil show, 2,645 ft; water, 2,-660 ft; show oil in gran. wash, 2,790-95 ft; 8-in. cas. set., 2,803 ft; show gas, 2,814 ft; C.O., 3,-208 ft. to deepen.

Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B — Flow and swabbed 20 bbls. for week from granite wash, 3,000 to 3,010 ft; drlg., 3,014 ft.

Rensoul Pet. Co.'s (was Salisbury & Reynolds') No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. Sur. — Flow, 40 bbls. daily from granite wash topped, 2,407 ft; drlg. granite wash, 2,845-53 ft. with small increase; shot with 400 qts., 2,695-2,780 ft. and 150 qts. at 2,560-2,620 ft., C.O.

Sullivan et al's No. 1 fee, NW cor. E half SW, Sec. 1, Blk. 1, A. C. H. & B. Sur. — U.R. 10-in., 1,610 ft.

J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 — Rig; temp. abd.

HALE COUNTY

Donnell Pet. Co.'s No. 2 Mullican, NW cor. Sec. 66, Blk. A-3, I. & S. B. Sur. — Top pay in sandy shale, 405 ft; ½ bailer oil and 3 bailers water per day; drlg., 497 ft.

Donnell Pet. Co.'s No. 1 Mullican, C Sec. 21, Blk. B, R. M. Thompson Sur. — 200 ft. fluid in hole from 407-14 ft; S.D.

Exploration Co.'s No. 1 Crawford, cen. NE, Sec. 17, Blk. C-3, T. T. R. R. Sur. — Spud and S. D.

Exploration Co.'s No. 1 fee, C SE half Sec. 19, Blk. S-4, D. & S. E. Sur. — Rig; T.A.

Exploration Co.'s No. 1 Goodman — Spudded and S.D.

A. S. Mimm's No. 1 W. A. Ritcher, 700 ft. from east line and 1,200 ft. from south line, Sec. 17, Blk. X, John Glynn Sur. — S.D., 350 ft. for 10-in. casing.

HALL COUNTY

Seifert et al's No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. — Spudded and S.D.

HANSFORD COUNTY

Oklavania et al's No. 1 Coots, Sec. 13, Blk. 45, H. & T. C. Sur. — S.D., 350 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood — S.D., 400 ft.

HARTLEY COUNTY

Deep Rock Oil Co.'s No. 1 Lymann & Balfour, Sec. 9 Blk. 2 — Show gas and rainbow of oil, 2,-560 ft; top lime, 2,810 ft; 24,-000,000 ft. gas, 3,100-3,280 ft; show oil, 3,648-50 ft; 3,653-75 ft. 150 ft. salt water; set 6-in. 3,642 ft.; S.D. 3,765 ft. contract depth.

Eslick et al's No. 1 J. R. Irving, Sec. 13, Blk. 13 — Topped granite wash, 3,108 ft; show oil, 3,226 ft; drlg., 3,620 ft.

J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22 — Drlg., 3,280 ft.

J. E. McKanna's No. 1 J. M. Shelton est., Sec. 29, Blk. 202 — S.D., 3,595 ft; cas. trouble; rig blown down; rebuilding rig.

HEMPHILL COUNTY

Hoover et al's No. 1 Schaller est., Sec. 4 — Spudded and S.D.

Hoover et al's No. 1 fee, J. S. Hood Sur. — Run. 5-in. cas. to 4,555 ft; S.D., 4,598 ft.

HUTCHINSON COUNTY

Amarillo Oil Co.'s No. 1 Ida Ingertox, Sec. 41, Blk. 46, H. & T. C. Sur. — 70,000,000 ft. gas, 2,400-2,610 ft; run. 8-in. to 2,665 ft; drlg. by tools, 2,800 ft.

Anderson & Pritchard's No. 2 William Yake, SW cor. NW, Sec. 1, Blk. J, H. & G. N. Survey, half mile W of No .1 — Topped lime, 2,025 ft; set 8-in. at 2,030 ft; drlg., 2,290 ft.

R. G. Barnum et al's No. 1 Garland Sanford, Sec. 78, Blk. 46 — Rig.

Beam et al's No. 1 Cockrell, Sec. 3, Blk. 23 — S.D., 405 ft. for orders.

Berryman Oil Co.'s No. 1 Sanford, Sec. 83, Blk. 46, H. & T. C. Sur. — 80,000,000 ft. gas, 2,690-2,905 ft; show oil, 2,915 ft; show oil 3,-030-39 ft; S.D., 3,040 ft.

Big Coach Oil Co.'s No. 1 Dunnaway, Sec. 5, Blk. Y — S.D., 750 ft.

Conklin et al's No. 1 Johnson, Sec. 1, Blk. X03, H. & O. B. Sur. — S. D., 600 ft. for 12-in.

Great Plains Oil Co.'s No. 1 Bivins, Sec. 13, Blk. Y-2, T. T. R. R. Sur. — 60,000,000 ft gas, 2,540-60 ft; S.D., 3,017 ft.

Great Plains Oil Co.'s No. 1 Kingsland, Sec. 4, Blk. Y — S.D., 2,345 ft.

Golden Eagle Oil Corp.'s No. 1 J. Q. Bost, Sec. 6, Blk. Y-2 — Derrick.

McMan O. & G. Co.'s No. 1 Albert Yake — Drlg. by tools, 2,550 ft.

Panfield Oil Co.'s No. 1 Luginbyhl Bros., Sec. 50, Blk M-23 — S.D., 1,200 ft.

Phillips Pet. Co.'s No. 12 Elva-Whittenburg, E. Tomlinson Sur. — Drlg., 4,302 ft.

Prairie O. & G. Co. and Vacuum Oil Co.'s No. 1 Cal Merchant — Drowning out 75,000,000 ft. gas, 2,252-2,740 ft; drlg. by tools, 2,-550 ft.

Roxana Pet Corp.'s No .1 E. Cockrell — Top pay lime, 2,835-36 ft; flowing 3,000 bbls. daily.

Skyrocket Oil Co.'s No. 1 Mrs. R. A. Jameson — Fish., 2,519 ft.

Sweeney et al's No. 1 Johnson, Sec. 38, Blk. Y — Shut down, 1,720 ft.

The Texas Company's No. 1 Ellis Cockrell, Sec. 1, Blk. Y — Drlg., 3,302 ft.

Vitek Oil Co.'s No. 1 W. F. Allen, Jose Rodriguez Sur — S.D., 180 ft.

KING COUNTY

California Co.'s No. 1 Spikes Farm No. 2 — Show of gas, 1,980-90 ft; 6 bailers salt water per hr., 2,085-90 ft; drlg., 2,905 ft.

Gibson & Johnson's No. 1 Burnett est. — Salt water, 2,525-50 ft; run. 8-in. to 2,576 ft; U.R. to 3,380 ft.

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. — Spudding.

Midwests' No. 1 Patton — U.R., 8-in., 2,940 ft.

J. L. Pattison's No. 1 Patton — S.D., 2,225 ft; slight show gas, 2,115-30 ft.

Sinclair — H.F.W., 3,265 ft; S.D.

White Eagle's No. 1 — Drlg., 3,125 ft.

LAMB COUNTY

Tolbert & Simms' No. 1 Elwood, NE SW SW, Sec. 14, Blk. B., R. M. Thompson Sur. — Rig.

LIPSCOMB COUNTY

Cal-Tex's No. 1 Bradford, C NE NE Sec. 899, Blk. 43, H. & T. C. Sur. — Spudded and S.D.

Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 — Shut down, 600 ft.

McCorkle's No. 1 A. Barton, NE cor. SW SE Sec. 504, Blk. 43, H. & T. C. Sur. — Water in lime at 4,126-40 ft; 6-in. set, 4,155 ft; S.D., 4,200 ft.

Ozark Drlg. Co.'s No. 1 Frass, NE SE Sec. 106, Blk. 10, H. & T. C. Sur. — Rig on ground.

Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW, Sec. 100, Blk. 43 — S.D., 3,800 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch — Drlg., 1,300 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44 — Making 84,000,000 ft. gas; lime, 3,425 ft; gas killed; T.D., 3,556 ft; shut in.

Shadler Bros.' No. 1 John Lowery, Sec. 237, Blk. 44 — Topped lime, 2,680 ft; set 8-in. at 2,770 ft; 4,000,000 ft. of gas, 2,-980-3,020 ft.

Prairie and Shamrock's No. 2 Gober, Sec. 16, Blk. M-21 — Drlg., 1,100 ft.

MOTLEY COUNTY

Exploration Co.'s No. 1 Burleson — Spudded and S.D.

Exploration Co.'s No. 1 Tillson — S. D., 750 ft. for repairs.

Exploration Co.'s No. 1 Matador Land & Cattle Co., cen. SW, Sec. 37, John Gibson Sur. — Spudded and S.D.

Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. — Spudded and S.D.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43 — Fish. 3 joints pipe, 3,940 ft.

Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 43 — S.D., 250 ft.

McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 — S.D., 1,600 ft.

McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 — Fish. for bit, 560 ft.

Standard Dec. Co.'s No. 1 Bowden, Sec. 923, Blk. 43 — S.D., 900 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landegrin, SE cor. NE SW Sec. 46, League 310, Capital land — 1,900 ft. water, 4,085-93 ft; drlg. at 4,440 ft.

PARMER COUNTY

Humble O. & G. Co.'s No. 1 Farwell; elev. 4,005 ft — Temp. abd., 3,600 ft.

POTTER COUNTY

Amarillo Oil Co.'s No. 1 Masterson, Sec. 69, Blk. O-18, D. & P. Sur. — Drlg., 2,100 ft.

Amarillo Oil Co.'s No. 1-B Masterson, Sec. 43, Blk. G-M-3, G. & M. Sur. — Drlg., 610 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A — Show gas, 4,990 ft; show oil, 4,-992 ft; cas. set at 4,992 ft; S.D., 5,085 ft.

Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2 — Cellar; temporarily abd.

Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2 — S.D., 650 ft.

Roco Oil Co., formerly Charles Page et al's No. 1 W. T. Hammon, Clay County school lands — Spud. and S.D.

C. C. Wilson, No. 1 A. H. Tandy, NE cor. Sec. 182, Blk. 42, H. & T. C. Sur. — Spud. and S.D.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B — Show of gas, 2,015-25 ft.

Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur. — Drlg. red rock and salt, 2,315 ft.

Phillips Pet. Co.'s No. 1 Price & Fuqua, C NE, Sec. 33, Blk. 2-B, G. H. & H. Sur. — Show gas, 2,105 ft; U.R., 2,215 ft.

Whitehead et al's No. 1 Lee Bivins, C SW Sec. 36, Blk. 2, G. H. & H. Sur. — Location abdn.

SWISHER COUNTY

Explin. Co.'s No. 1 W. C. Denwiddie, Sec. 70, Blk. M-11, A. B. & M. Sur.; elev. 3,610 ft. — Rig on ground.

R. H. Miller's No. 1 Todd — Loc. temporarily abd.

WHEELER COUNTY

Angus et al's No. 1 Vermillion, SW cor. NW SW, Sec. 80, Blk. 17, H. &. G. N. Sur. — T.D., 2,139; S.D. in granite; 10,-000,000 ft. gas, 2,040-45 ft.

Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24 — Fish. tools, 2,000 ft; S.L.M., 10,-000,000 ft. gas at 2,000 ft.

Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. — Spudded and S.D.

Hatcher et al No. 1 J. Hatcher, cen. NE SW Sec. 80, Blk. 23, H. & G. N. Sur. — Spudding.

Lyons et al's No. 1 Jackson, Sec. 11, Blk. 27, H. & G. N. Sur. — S.D., 2,456 ft.

Marland Oil Co.'s No. 2 W. E. Bentley — Show gas, 2,305 ft; S.D., by agreement.

Piney Oil & Gas Co.'s No. 1 M. E. Ackley, C NW NW Sec. 20, Blk. 24, H. & G. N. Sur. — Rig.

Piney Oil & Gas Co.'s No. 1 W. S. Walker, Sec. 44, Blk. 24, H. & G. N. Sur. — U.R. 8¼-in., 1,800 ft.

Wheeler O. & G. Co.'s No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 — T.A.

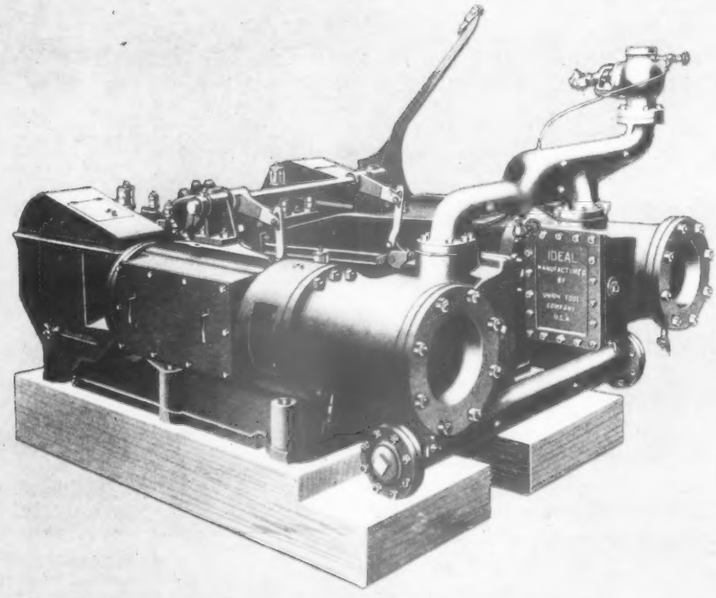
Smith Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 — S.D., 2,112 ft. for orders, preparing to resume drilling.

E. L. Woodley, Jr.'s No. 1 Woodley, Sr., Sec. 13, Blk. 5-A — Show oil, 2,227 ft; tools in hole, 2,382 ft.; shut down.

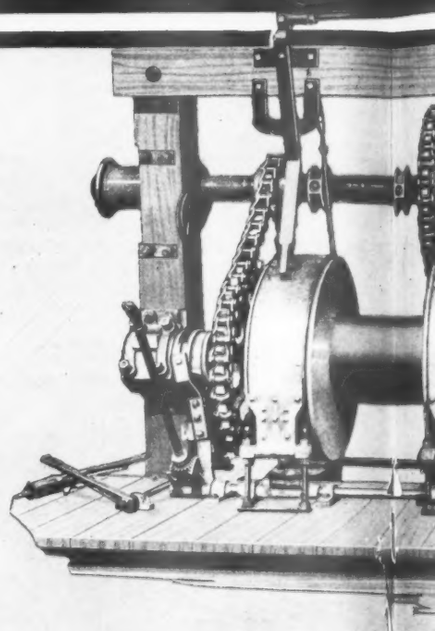
The Texas Company's No. 1 Bell, Sec. 71, Blk. 13, H. & G. N. Sur. — Gas 2,005 ft; swabbed 40 bbls. in 8 hrs. from granite wash, 2,-145-55 ft; 1,000 ft. oil; drlg., 2,495 ft.

The Texas Company's No. 1 Morgan, Sec. 93, Blk. 17 — Rig.

IDE
ROTARY EQ



IdeaL 12x12 TWIN DRILLING ENGINE



IdeaL 5-C-3 ROTARY

IdeaL No. 12—25½" ROTARY MACHINE

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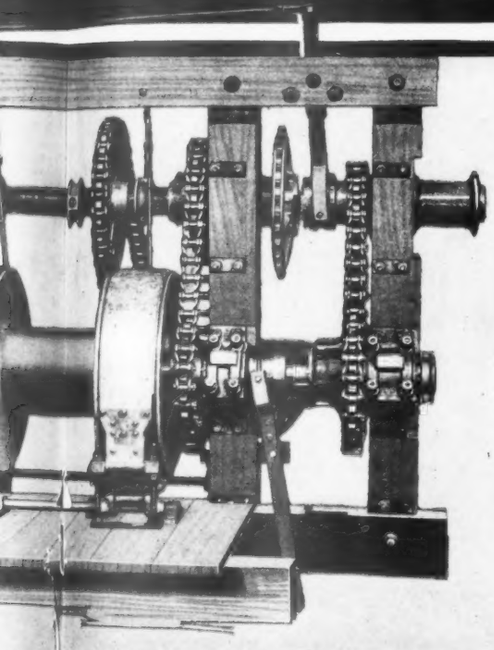
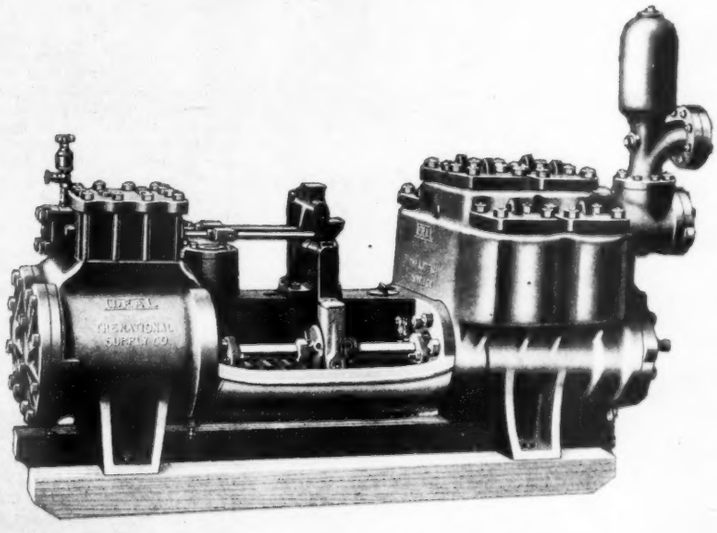
COMPA

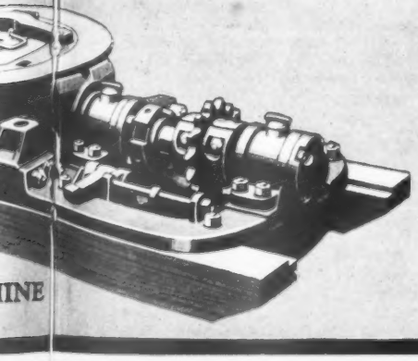
EAL
EQUIPMENT



ROTARY DRAW WORKS



IdeaL 14x7¼x14 DUPLEX SLUSH PUMP



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PRORATION NEAR IN PECOS COUNTY FIELD

(Continued from Page 29)

a proration plan acceptable by all of the companies interested; however, some time is expected to be given towards ironing out the details of the plan.

Operators are earnestly making efforts to prevent the rapid drilling of the field. At present the crude has only a limited market. Steel tankage is generally considered the only practicable storage for the Pecos crude. The sulphur content in the crude would cause it to corrode the steel rapidly and make the salvage of that equipment practically negligible. That in addition to the original cost of the tankage and the carrying cost is one of the factors causing the operators to make determined efforts to hold Pecos production in the ground as much as possible.

It is felt by the majority of the operators that the Pecos situation will have a direct bearing on the other west Texas areas, Winkler County in particular. Those operators feel that if the effort to prorate production in Pecos is successful then the same method can be applied to the other west Texas areas. Otherwise several hundred thousand barrels of west Texas crude will be produced daily within a few month which would bring about another cut in crude and cause a feverish tank building campaign, according to many operators.

E. A. Landreth, Fort Worth, Tex., and head of the Landreth Production Corp., suggested to the Pecos operators that the meeting be expanded to take in the Westbrook Pool operators in Winkler County. Following a lengthy discussion it was decided to finish the task at hand first.

While the Pecos proration committee hopes to have a definite agreement acceptable to all operators worked out by the next meeting it is the opinion of the producers that some plan will be in operation by October 1. At that time the Humble Pipe Line Co.'s Ingleside line will be in operation and that company will be in a position to handle 30,000 bbls. of Pecos crude daily.

Field Work Gaining

In the meantime field work in Pecos County is gaining. The field has been widened out to the west and north and first reports from the field are increasing. The Illinois Pipe Line Co. is rushing work on its line from Pecos to Del Rio on the Southern Pacific Railroad where a 2,000,000-bbl. tank farm is to be built. Runs from Pecos have been increased and the Humble company is now running around 7,700 bbls. from the field.

In the letters sent to operating companies in Pecos inviting them to the Fort Worth meeting, figures of estimates made by the Humble company technicians on the ultimate recovery of five pools in West Texas were given. Their estimates placed the ultimate recovery of those fields at 599,000,000 bbls. They estimate that Pecos production could be sent to 323,000 bbls. daily by December 1. It is estimated that unchecked drilling in all west Texas areas would send the daily average production up to around 600,000 bbls. daily. The present production in west Texas is 176,000 bbls.

The estimated ultimate recovery of those five areas is as follows:

Yates	255,000,000
Church & Fields	55,000,000
McElroy	100,000,000
McCamey	54,000,000
Winkler	135,000,000
Total	599,000,000

No foundation to the report that Pecos producers were antagonistic to the Humble company's proration plan because that company was reported to be favoring other west Texas areas and especially in contracting to move 30,000 bbls. daily for the Southern Crude Oil Purchasing Co., could be found among the operators in Fort Worth.

While in Fort Worth Mr. Farish denied the Humble company had contracted to move any crude for the Southern Crude Co. and added that the Humble company was not buying any oil from that company.

Pipe Line Capacity

The Humble Pipe Line Co. will have a capacity for about 90,000 bbls. daily out of west Texas when the line to Ingleside harbor is completed. That company has one line running from Big Lake in Reagan County to Comyn in Comanche County and the second trunk system will probably be completed by October 1. That will afford a capacity of around 80,000 bbls. daily and 10,000 bbls. additional through the Humble company's refinery at McCamey.

Humble company has a long time contract with Reagan County producers calling for the movement of 20,000 bbls. daily. It has a contract for 10,000 bbls. daily with the Marland Oil Co. and 10,000 bbls. daily with the Simms Oil Co. and Atlantic Oil Producing Co.'s joint property in Crane, which would force the Humble company to move 40,000 bbls daily under contract. The 30,000 bbls. of line capacity given to Pecos productiion would use 70,000 bbls. daily of the line capacity.

At present the Humble's own production in west Texas, along with crude it is buying from the other producers in west Texas, is keeping the line running to Comyn operating at capacity and crude movements are being made out of west Texas by tank car by the Humble company to some extent.

So far as the Pecos situation is concerned, developments near Humble acreage make it appear the property is capable of producing enough to operate the Pecos line to capacity for some time to come.

SHREVEPORT MARKET FAILED TO IMPROVE

SHREVEPORT, La., Sept. 5.—Despite an excellent movement of motor fuel from Arkansas and north Louisiana refineries to local, southeastern and other differential territory, the market failed to improve in price. If there was any stronger tone in the picture it was largely in the fact that sellers were attempting to hold out for the top of the market range at 6½ cents rather than unload at 6¼ cents. On the other hand 6¼-cent gasoline was fairly plentiful.

Sellers here blame the weak price structure on efforts of certain large sellers in other districts reducing inventories, thus preventing local refiners from benefiting from the good demand which prevails in their territory. Several refiners here report being sold up for the first half of September although at competition prices.

Kerosene continued strong due to its scarcity as this product was virtually cleaned up by several export orders the previous week. Shreveport refiners easily were getting 4¼ to 4½ cnts for any extra material they turned out.

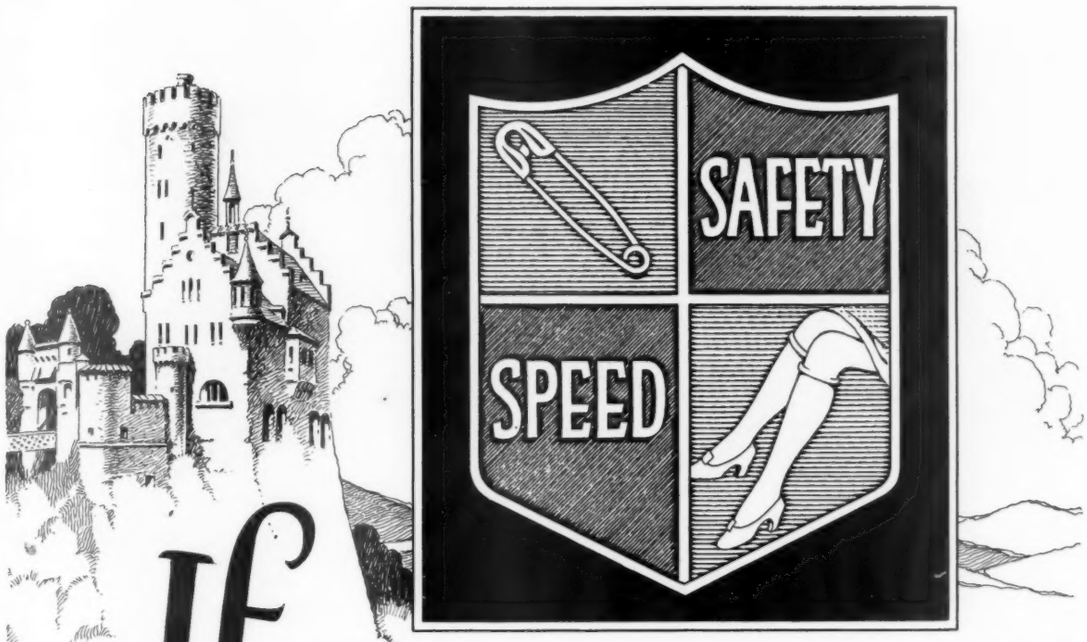
Gas oil was unchanged but refiners are looking forward to an early cold snap in northern states and the opening of the gas oil season with possible strengthening of the market by the latter part of the month. Fuel oil had a somewhat softer tone as material was offered more freely at $1.10 and $1.12½ cents. The top of the market continued at $1.15 as business was done at that figure for territorial movement.

JOSEPH SEEP WELCOMED

OIL CITY, Pa., Sept. 3.—Joseph Seep, chairman of the board of directors of the South Penn Oil Co., head of the Joseph Seep Purchasing Agency and prominent in other large corporations and business, has returned to his home in Titusville, Pa., after a six weeks rest in Battle Creek, Mich. Mr. Seep was at his office in the National Transit building Friday and was being welcomed by many local residents who have become admirers of the dean of oil men.

COMMITTEE ON MEXICAN OIL

The United States Chamber of Commerce in Mexico City has formed a committee on petroleum composed of W. E. McMahon, Standard Oil of New Jersey; George Glascock, Mexican Eagle Oil Co.; A. F. Millan, Oil Well Supply Co., and R. C. Stoner of Richmond Petroleum Co.



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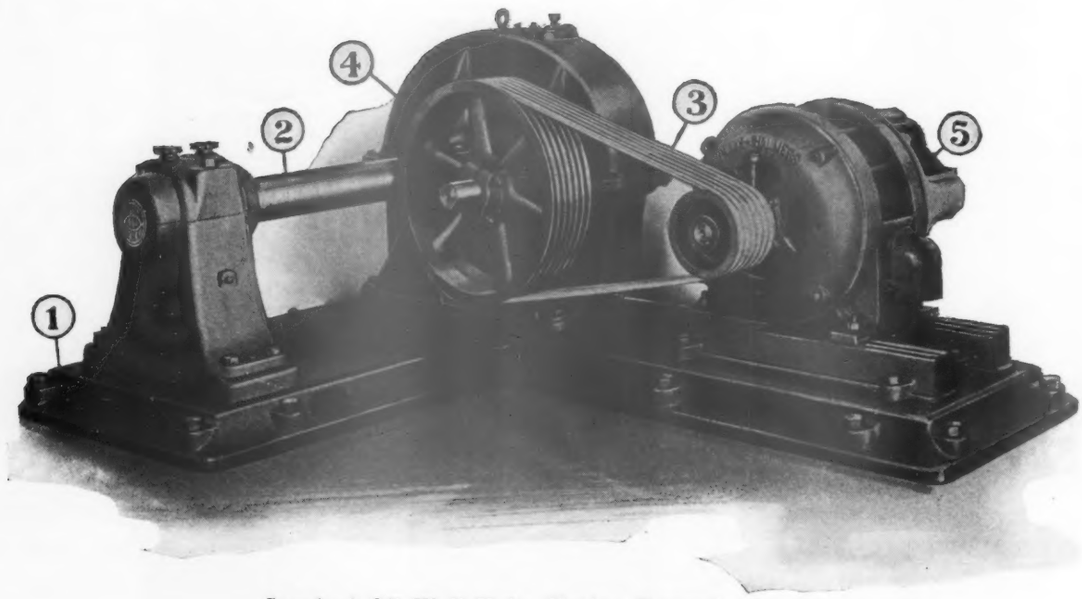

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See Bulletin 1232

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CALIFORNIA FIELDS

(Continued from Page 56)

Pacific Coast Oil Co. had better luck as its No. 2 Dupont, a new well, came in doing 275 bbls. daily from 4,205 feet but built it up the next day to 360 bbls., the gravity of the oil remaining unchanged at 23.2 degrees. The Oilfields Construction Co. and S. I. Wicker had a similar experience, the former's No. 1 Vessells coming in as a pumper doing 200 bbls. a day from 3,898 feet only to start flowing 250 bbls. a day or two later. Wicker's No. 1 Shore showed an initial pumping of 300 bbls. from 3,842 feet and increased the next day to 340 bbls., the oil cleaning up in the meantime. Price & Richards finished another small upper sand producer when their No. 2 Huntington was brought in pumping 82 bbls. of 14.6 gravity oil daily from the shallow depth of only 2,105 feet. This new well only required one string of pipe, 1,925 feet of 10-inch, in addition to a 200-foot perforated liner.

Long Beach

The Richfield Oil Co., having taken possession of the properties recently acquired from the San Martinez Oil Co. and A. J. (Art) Delaney, has already proceeded to stimulate production by additional drilling and deepening of present producers. In the deal closed by the Richfield, 10 undrilled locations were secured and it is understood these wel's will be drilled as quickly as the holes can be put down. Present plans involve the employment of at least five strings of tools until the entire drilling program has been completed. The Richfield Oil Co. has experienced considerable success in developing deep zone production at Long Beach and it is logical to assume that future work will prove just as productive. In the San Martinez deal the Richfield made at least $500,000 through its ability to prosecute drilling operations to the maximum, the former company being somewhat handicapped through lack of adequate finances to handle a drilling program of this scope.

The Long Beach Field has probably been the most productive and consistent producer ever opened up in California and if the Shell's No. 10 Cresson is any criterion of what may be expected from additional deep zone drilling this area will continue to maintain its present distinction for some time. This new well, which went on production early in the week, was completed in the deep sand at 5,463 feet, from which depth it came in under a natural flow doing 1,410 bbls. of fairly clean 27.8 gravity oil daily. The Shell has two other potential deep zone producers on this property, one of which, No. 8, should be finished shortly. The Shell, discoverer and the largest individual producer in the Long Beach Field, could add at least 10,000 bbls. to its daily production by deepening upper zone producers if desired but it is not likely that any such policy will be undertaken at present for quite obvious reasons, not the least of which is the desire to keep this oil in its natural state for future use and at the same time refrain from precipitating a general deepening program by other operators, which would undoubtedly upset well-calculated plans of holding back all unnecessary work until conditions improve. The Western Oil & Refining Co. should conclude the laying of a new 6-inch line from the Long Beach Field to its Wilmington refinery within the next 15 days and oil purchased in this district will begin moving shortly thereafter. This new line, which is approximately 7 miles long, is being laid by Robertson & Co. at a cost of approximately $50,000. The California Eastern Oil Co. has just completed No. 1 fee as a 165-bbl. well after plugging back from 4,823 feet to 4,675 feet because of bottom water but the plug is not performing its mission as the output is still cutting 15 per cent water.

Dominguez

The Dominguez Field, which has been lying dormant for the past year, will probably continue more or less inactive for another 12 months unless the general production situation takes a sudden change for the better, which doesn't seem to be in the cards. The Union has already definitely proved up the existence of an oil horizon in this field stratigraphically lower than that from which present production is coming but apparently some further information is desired as the company has another well, No. 17 Callender, drilling ahead for a conclusive test. This well is down 5,120 feet, about 1,000 feet deeper than the upper sand, and while no definite announcement has been made regarding the status of future possibilities, the announcement made several months ago that an ultimate recovery of at least 100,000 bbls. per acre might be anticipated confirms the general opinion that both the upper and lower sand will prove exceptionally productive.

Rosecrans

Drilling operations in the Rosecrans Field have been almost nil during the past several months and, while the Barnsdall and Union could easily double present production by additional drilling, this policy will not be adopted due to the desire of both to hold back development pending the return to normal. The former has practically suspended all drilling operations but the latter is working on three or four potential producers, one of which, No. 34 Howard Park, may be tanking oil in the near future, unless drilling is suspended just previous to completion.

Inglewood

The Inglewood Field presents a somewhat similar situation, although in this case there are not very many undrilled locations as far as upper zone production is concerned. The Standard has been running three or four strings of tools intermittently during the past year or so, although a large part of this work is of a corrective nature, involving former producers which have gone off production from time to time. During the past month there has been a slight revival of interest in this field with the result that four new wells were spudded in during this period. The Brownmoor Oil Co. has one of these and the Standard three. The Eureka Refining Co., which took over the holdings of the Mohakw Oil & Gas in this district several weeks ago, has already started redrilling and deepening No. 3 from the upper to the lower sand and the outcome of this work will no doubt be watched with considerable interest as it may affect other operators and result in the deepening of additional nearby wells.

Richfield-Brea Olinda

Four new wells were completed in the Richfield district during the week, two by the Standard and one east by the Associated and General Petroleum. The largest was No. 10 Thompson of the General Petroleum, drilled to 4,626 feet and finished with a 6⅝-inch oil string. Exact production figures for the first full 24-hour test show it to be making 560 bbls. of fairly clean 22.6 gravity oil daily and all indications point to a sustained flow. The Standard's two new producers were No. 2 Vejar and No. 3 Anaheim Union Water. The former resulted in a 193-bbl. well from 3,137 feet, while the latter came in pumping 160 bbls. of 17.8 gravity oil daily from 2,929 feet but built up the following day to 210 bbls. The Associated's No. 6 Kammerer resulted in satisfactory commercial production and it is being listed for completion doing 188 bbls. daily from 4,281 feet, the hole having been finished with a 6⅝-inch oil string. The Union, California Petroleum and several other individual operators should finish additional new wells during the coming week in both the Richfield and Coyote Fields. At Brea Olinda, the Union, Birch and Shell Oil companies are also expected to list one or more new producers. The Shell's deep test in this district, No. 40 Columbia, passed the 6,700-foot level early in the week, the predominating formation being a hard sandy shale devoid of any encouraging showings.

Ventura

One new well and a recompletion were chalked up as a result of development work in the Ventura Avenue Field. The latter was No. 37 Lloyd of the Associated, which was recompleted doing 600 bbls. a day from 6,459 feet but built up a short time later to 900 bbls. This well, incidentally, required 18 months of hard work between spud and completion, a large part of this period being consumed by a rather difficult fishing job which at one time looked almost insurmountable. Persistency was rewarded, however, and while the well was not as large as anticipated it was a commercial producer. The Associated is still curtailing is drilling operations in this field and although a new rig is going up for No. 102 Lloyd this does not mean any change in the company's conservation policy of restrictive work.

The Shell, on the other hand, is maintaining a rather aggressive drilling program covering the Edison, Gosnell and Taylor leases and this work will no doubt be reflected in daily field production during the next several months. The Shell's latest completion was No. 19 Taylor, a new well which showed an initial daily output of 1,940 bbls. of clean 29.1 gravity oil and approximately 2,500,000 feet of wet gas. This well, which is the third successful completion in this field by the Shell during the past two weeks, has 2,485 feet of 100-mesh screen, indicating the presence of at least an equal amount of oil-bearing formation from which to draw. It will probably be another several weeks before the Shell completes additional wells but several are coming along together and they should be finished some time around the close of September. In the meantime the Petroleum Securities will probably bring in No. 2 Willett and Nos. 2 and 3 on the Orton property, both leases being located in the extreme southern part of the field and definitely proved up for substantial production. G. J. Magenheimers No. 1-A Hartman in the northern part of the field was given a preliminary production test several days ago but failed to result in commercial production and drilling has been resumed wtih the 7,000-foot level as an objective.

Kern River

Drilling operations on the Kern front resulted in the completion of four new wells. George F. Getty accounted for two by bringing in a new well on the Tegeler and Lehnhardt leases, both of which by a strange coincidence were designated as No. 23. The former, No. 23 Tegeler, which is located in Section 22-28-27, was good for 124 bbls. per day from 2,635 feet, while the latter, in Section 14-28-27, was slightly smaller, the initial 24-hour pumping being 119 bbls. of 16.1 gravity oil from 2,158 feet. The General Petroleum, which is ruuning six strings of tools in this area, completed No. 15 Young at 2,135 feet, from which depth it registered an initial pumping of 138 bbls. daily. The Standard completed three wells but only succeeded in putting one on production. This was No. 9 in Section 27-28-27, which, because of water trouble, only made 110 bbls. of oil daily from 2,465 feet. Corrective measures have already been undertaken and better production can be anticipated when the handicap has been removed. The St. Helens Petroleum is expected to finish its first successful producer on the Kern front some time within 10 days as its initial test in Section 26-28-27 has opened up approximately 100 feet of sand at 2,250 feet.

Round Mountain

Simultaneously with the starting of its well on the Kern front, the St. Helens Petroleum spudded in its first undertaking in the Round Mountain Field in Section 13-28-28, some 15 miles northeast. Both wells encountered the oil sand almost at the same time and while the one on the Kern front was of no particular importance that in the Round Mountain Field has proven very interesting as it extends the limits of the field about a mile northwest of the discovery well. The sand in this hole was picked up at 1,970 feet and while production is not yet absolutely assured the outlook is quite favorable. The pay found by the St. Helens was a little deeper than the depth at which the same sand was found in the Elbe discovery well, indicating that the latter is nearer the crest of the structure. Drilling operations in this field are being retarded because of the absence of pipe line facilities and this condition will probably continue to exist for the next six months at least. The Shell, which already has several hundred acres under lease in this field, acquired another 600 acres a week or 10 days ago and, while lease requirements do not call for early work, one well will probably be spudded in within 90 days as an initial test to get a line on production. The action of larger operators in acquiring additional holdings in this area are especially interesting as the extent and direction of the field is still undetermined, although the Elbe Oil Co. which drilled the discovery well, appears to have the cream of the acreage tied up. The Mount Poso Field, which lies west and a little north of Round Mountain, closed another very quiet week due to decreased drilling resulting from lack of pipe line facilities and undesirability of this heavy oil at present.

Northern California Wildcats

Recent developments in the Seacliff area of Ventura County, approximately 15 miles west of the prolific Ventura Avenue Field, tend to indicate that it will probably be several months before this section can be thoroughly tested out, as both of the Chanslor-Canfield Midway Oil Co.'s two wildcats are experiencing mechanical trouble which may require the drilling of another test well. The two wildcats in question will be worked over in an effort to remedy the present trouble but the outlook is not any too favorable for an early recovery. The Pan American's No. 1 State will probably go a long way toward determining the possibilities of this section as operators are inclined to believe the apex of this structure lies along the ocean front not far from this company's present test which is within a stone's throw of the surf. With the Seacliff area temporarily out of the picture wildcatters are centering their attention on the district in and around Bakersfield in Kern County, where the Pacific Eastern Production Co. has been attempting to bring in a commercial producer for the past several weeks. This wildcat, incidentally, is still untamed and although it shows every symptom of resulting in commercial production, it cannot be forced to flow. Major operators are still picking up leases wherever available, the latest transaction of record being one whereby the Associated secured a lease on 160 acres belonging to the estate of Charles Cohn, deceased, for a cash bonus of $50 per acre. The land is located near the Bakersfield sewer farm tied up by the Standard a month or two ago on a one-eighth royalty basis and a cash bonus of $25 an acre.

Wildcat Acreage

Wildcatters are literally tying up every available acre within a 25-mile radius of the Gulf Production Co.'s Union Avenue wildcat at Bakersfield and a number of tests are scheduled to get under way within 90 days. The Shell has been playing the area north of this test and leasing activities indicate that additional holdings have recently been acquired between the Round Mountain and Mount Poso Fields and even further north than this. The Shell holds approximately 960 acres in the Little Creek area northwest of Mount Poso, while the Associated and Petroleum Securities control 480 acres and 640 acres, respectively. The California Petroleum, Chanslor-Canfield Midway Oil Co., Barnsdall and others all have more or less protective acreage. Activities in this area north of Bakersfield are divided between the Little Creek area and the Mon Bluff area where the Shell will soon undertake another wildcat. The Elbe Oil Co., discoverer of the Round Mountain Field, has acquired several hundred acres within 2 miles of the Stockdale Country Club and a test is scheduled to be drilled soon on an 80-acre tract recently acquired from the Westland Development Co. in Section 11-30-27. Protective acreage in this section has been acquired by the Union, Standard, Associated, Shell, Pacific Eastern, Petroleum Securities and Universal Oil companies. The North American Consolidated has already started work on what will probably be one of the most important tests to be drilled in Kern County up to the present as it is out in the center of the floor of the San Joaquin Valley in Section 5-25-25, about 3 miles west and 1 mile north of Delano. Some-

(Continued on Page 94)

Geological Distillation of Petroleum

Generation During Mountain Building Described as Virtually in Giant High Pressure Cracking Still

By John L. Rich*
Ottawa, Kansas

One of the fundamental unsolved problems of petroleum geology is the source of the oil—whether formed close to the place where it is found or generated in certain areas under special conditions and later distributed widely to its present resting places. The problem is intensely practical, because on its solution depends an effective scientific search for regions most likely to produce oil.

In the present tendency toward acceptance of the theory that oil does not travel very far from its source, one of the most obvious and one of the most competent of the possible causes for the generation of petroleum and natural gas in large quantities appears to be either almost entirely forgotten or classed among the theories which are too preposterous to deserve serious consideration. I refer to the large-scale distillation of petroleum as an incident of mountain-making crustal movements and its later wide dissemination through the rocks to its final resting places, perhaps hundreds of miles from its source.

The ideas here presented were in considerable measure anticipated in a paper by Bailey Willis[1] and are in part an outgrowth of a conversation with A. C. Veatch who had been thinking along similar lines and to whom I am indebted for stimulating suggestions, but who is in no way responsible for any shortcomings of the theory as here presented.

In the light of the more recent studies of mountain structure and of the broader geologic relations which prevail during mountain building and subsequently, the theory of geologic distillation of petroleum merits renewed consideration.

Production of Oil

In regions of intense mountain folding carbonaceous rocks have become devolatilized; coals have been changed to the higher bituminous grades or to anthracite; and bituminous shales, once "oil shales," have lost their oil. In this process enormous quantities of volatile hydrocarbons—oils and gases—must have been produced. They are not now found in the metamorphosed regions. Where are they? They evidently have escaped to some points outside of the zone of distillation. Such escape may have been upward to the surface or laterally along the bedding to adjacent regions outside the influence of the metamorphism.

In seeking the bearing of these facts on the question of the origin of oil deposits, it is important to visualize the geologic conditions under which the distillation occurred. This leads directly to the theory of mountain building and to consideration of the geologic events preceding, during, and following the elevation of a typical mountain range.

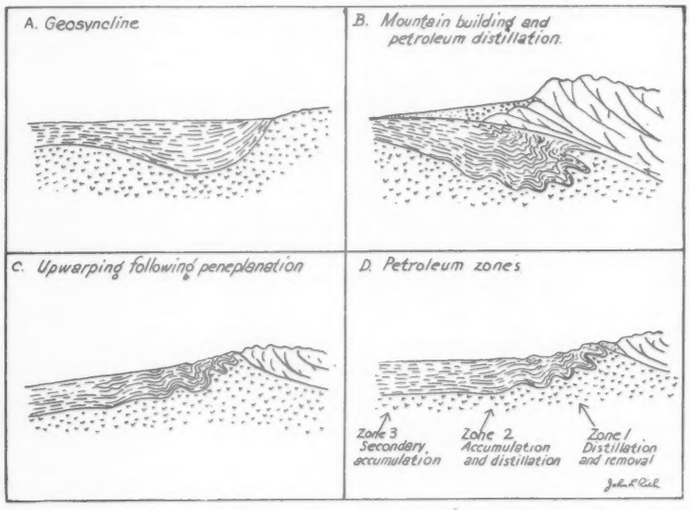
1. Stage of Sedimentary Accumulation

A preliminary stage in the history of most great mountain chains seems to be the accumulation of a thick series of dominantly shallow-water rocks in a deep geosyncline in or on the borders of which the mountain building is later localized. Figure 1, A. These geosynclinal sediments, partly because of their shallow-water origin, are commonly carbonaceous, and locally highly bituminous. It is possible that more or less gas and oil are generated in these sediments by biochemical agencies as they are laid down and subsequently, previous to any dynamic metamorphism.

2. Period of Mountain Building

The more thoroughly mountains are studied, the more certain it becomes that the dominant element in mountain building is large scale overthrusting by which great slices of the earth's crust are thrust forward and up and piled one upon another, overriding, folding and crumpling weaker rocks which happen to be caught beneath. Figure 1, B[2].

This condition may be illustrated by the southern Appalachians[3] and the Ouachita Mountains. In the former the thrusts came from the east and southeast; in the latter, from the south. In the southern Appalachians the remaining structures and the exposed thrust planes indicate that great thicknesses of rocks thrust from the east overrode and were piled up on the sediments of the Appalachian geosyncline which bordered the thrust zone on the west. Such a piling up of sheet upon sheet of rocks presumably built up a high mountain mass over the site of the buried sediments and, on the principle of isostasy, must have led to settling of the overloaded area[4], carrying the sediments buried under the overthrust mass deep into the earth's crust into a zone of relatively high temperature and pressure. See Figure 1,B.


A. Geosyncline
B. Mountain building and petroleum distillation.
C. Upwarping following peneplanation
D. Petroleum zones
Zone 3 Secondary accumulation
Zone 2 Accumulation and distillation
Zone 1 Distillation and removal

3. Stage of Distillation

While the sediments of the geosyncline were being buried under thrust sheets from outside, crumpled and folded in the process, and sunk deeper and deeper into the crust under the load of the thrust sheets piled up above them[5], conditions are believed to have been most favorable for devolatilization of carbonaceous rocks and the generation of oil and gas. The sediments would have been caught in what would have been essentially a high-pressure cracking still. They would have been subjected to these conditions for a very long time so that, in favorable situations, complete devolatilization and distillation of the carbonaceous rocks might occur.

What would become of the products of distillation under such conditions? Two forces would tend powerfully to drive them out of the zone of distillation—heat, and the pressure of the gases evolved. Two evident paths of escape would be (1) upward to the surface, and (2) laterally along the bedding of the sediments. The upward path would require movement crosswise of the bedding and of the overthrust sheets. Consideration of the probable presence of the overthrust sheets makes upward escape seem much more difficult than would be the case if distillation occurred near the surface where the rocks are now found. Under the supposed conditions of deep burial, the path of escape laterally along the bedding of the sediments, appears to be the easier. Jointing and faulting in the folded and crumpled zone might afford means by which the products of distillation could gain access to such members of the sedimentary series as would afford the easiest paths of escape. Fracture planes, joints, and bedding planes would probably play an important part in this migration, particularly in the more brittle members of the section.

In thinking of the possibility of lateral migration away from the zone of distillation it is important to bear in mind (1) that the migration would undoubtedly be backed by very high gas pressures; and (2) that heat and dissolved gases greatly lower the viscosity of oils[6] and make their movement through minute openings much easier than it is under surface conditions.

4. Period of Erosion

After mountain building has ceased there comes a period during which the mountain forms are eroded away, the overthrust sheets are worn off, and the folded and crumpled sediments below them are gradually brought to light. This process of erosion is commonly carried so far that the former mountains are reduced to a peneplain, and the process may be repeated several times if periodical uplifts occur, as is attested by remnants of peneplains of several stages found on the summits of most mountain ranges in the later stages of their physiographic history.

5. Period of Regional Upwarp

Following one or more stages of partial peneplanation, it seems to be the general fate of mountains, for some reason not yet fully known, to suffer a broad regional upwarping, so that the present relief of the majority of mountain regions, as, for example, the Appalachians, is not at all due to the original mountain folding. Figure 1, C.

During the periods of peneplanation and, in many instances, repeated regional uplift and erosion the sedimentary rocks which during the mountain building stage were deeply buried and subjected to strong metamorphic action are elevated and their cover worn off, so that finally they are exposed at the surface with a regional dip away from the former mountains. This exposes the edges of the strata to meteoric waters which set up an artesian circulation directed in general, outward from the uplifted area.

The regional uplift of the former mountain area and the establishment of an artesian circulation must necessarily lead to widespread readjustments of the rock fluids, with a general tendency toward movement away from the mountain region. In the course of this readjustment, oil and gas which had accumulated along the borders of the mountain belt outside the zone of metamorphism and distillation would be shifted, rearranged, and carried forward with the shifting rock fluids. Such movements might be complex and might be carried on continuously or intermittently during succeeding geologic ages and under varying physiographic conditions, the oil accumulating, perhaps, in favorable traps only to be flushed out and carried farther in later stages of physiographic evolution. In this way the final resting place of the oil might be a long way from its source.

As has already been suggested, in thinking of such secondary oil migration it is important to keep in mind the effects of heat and dissolved gases in greatly increasing the mobility of the oil.

Zones of Distillation and Accumulation

For convenience, three zones may be thought of as extending outward from the seat of mountain building and active distillation. These must, of course, merge into each other with all gradations between them. Figure 1, D.

1. Zone of Distillation

This is the zone of intense dynamic metamorphism where distillation has been more or less complete. In it, bituminous rocks have been devolatilized, carbon ratios are high, and no oil, or only small amounts of high-grade oil and a little gas remain.

2. Zone of Partial Distillation and "In Situ" Accumulation

In this zone the rocks have been partly devolatilized, carbon ratios are medium, and oil is plentiful. Part of this oil may have been formed by distillation in place or very close to its point of accumulation. Part of it has migrated into this zone from the adjoining regions of more complete devolatilization.

3. Zone of Secondary Migration and Accumulation

This zone includes all of the area outside of that in which active dynamic distillation occurred. The rocks are little altered; bituminous shales remain in the form of "oil shale"; carbon ratios are relatively low; and oil becomes in general, less and less plentiful with distance from the point of original distillation. Such oil as is found has not been formed in situ but has migrated to this zone either (1) during mountain building and

(Continued on Page 140)

*Paper read before the American Association of Petroleum Geologists at the Tulsa meeting, March 26, 1927. Printed in The Oil and Gas Journal by permission of the Bulletin of the American Association of Petroleum Geologists.

[1]Bailey Willis, "Geologic Distillation of Petroleum" Mining and Metallurgy, No. 157, Sec. 10, 7 pp., January, 1920.

[2]No attempt is here made to cite the many references to the literature of mountain thrusting. For brief summaries, with bibliographies, see Bailey Willis Geologic Structures, Chapter V, New York, 1923, and R. A. Daly, Our Mobile Earth, Chapter VI, New York, 1926.

[3]See United States Geological Survey, folios of southern Appalachian region, also, Arthur Keith, "Outlines of Appalachian Structure," Bull. Geol. Soc. Amer., Vol. 34 (1923), pp. 309-380.

[4]Albert Heim "Das Gewicht der Berge," Jahrbuch des Schweizer Alpenclub, 53 Jahrgang, 1918.

[5]Whether the process was overthrusting or underthrusting, as urged by Hobbs, Lawson, and others, is immaterial to the present problem. See Herbert Hobbs, "Mechanics of Formation of Arcuate Mountains," Jour. Geol., Vol. XXII (1914), A. C. Lawson, "Folded Mountains and Isostasy," Bull. Geol. Soc. Amer., Vol. 38 (1927), pp. 253-74.

[6]C. E. Beecher and I. P. Parkhurst "Effect of Dissolved Gas upon the Viscosity and Surface Tension of Crude Oil," Petroleum Dev. and Tech. in 1926, pp. 51-69, Amer. Inst. Min. and Met. Eng., New York, 1927.

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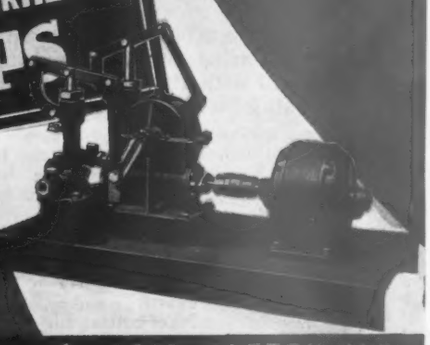

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IMPORTS FROM SOUTH AMERICA NOTABLY INCREASED IN AUGUST

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Sept. 5.—An increase of 908,000 bbls. in imports from South America in August compared with July was the principal factor in raising receipts of oil by water at Atlantic Coast ports in August to a high record of 20,019,000 bbls. or a daily average of 645,000 bbls. South American countries contributed a high record of 2,437,000 bbls. to the August total, or 78,000 bbls. daily, and almost equalled the total sent by Mexico, which was 2,521,000 bbls., or 80,000 bbls. a day.

Receipts of oil in August from the Pacific Coast increased slightly to 2,764,000 bbls., a daily average of 90,000 bbls., compared with 2,953,000 bbls., or 83,000 bbls. daily, in July.

Receipts from the Gulf Coast fell off somewhat, aggregating 12,297,000 bbls., as against 12,574,000 bbls. in July. The daily average for August was 397,000 bbls., against 406,000 in the preceding month.

The most significant change in receipts from Gulf ports was the greater contribution made by the Houston district, amounting to 4,822,000 bbls., or 155,000 bbls. a day. It is understood this was due partly to the shipments of Seminole and West Texas crude through this port to Atlantic Coast refineries. Within a few months it is expected some West Texas crude will be shipped direct from Ingleside or Corpus Christi, on the Gulf, to the Atlantic Seaboard, reducing proportionately the movement through Houston.

Total receipts for August of 20,019,000 bbls., compared with 15,429,000 bbls. in August, 1926, a gain of 4,590,000 bbls. or over 29 per cent.

	August, 1927	July, 1927	August, 1926
Baton Rouge and New Orleans	1,435,000	1,256,000	2,482,000
Port Arthur, Sabine and Beaumont	6,040,000	6,886,000	3,868,000
Texas City, Houston and Galveston	4,822,000	4,432,000	3,567,000
Gulf Coast	12,297,000	12,574,000	9,917,000
Pacific Coast	2,764,000	2,593,000	1,891,000
Mexico	2,521,000	2,415,000	2,172,000
South America	2,437,000	1,529,000	1,449,000
Total	20,019,000	19,111,000	15,429,000
Daily Averages			
Baton Rouge and New Orleans	46,000	42,000	81,000
Port Arthur, Sabine and Beaumont	196,000	221,000	124,000
Texas City, Houston and Galveston	155,000	143,000	115,000
Gulf Coast	397,000	406,000	320,000
Pacific Coast	90,000	83,000	61,000
Mexico	80,000	78,000	71,000
South America	78,000	49,000	46,000
Total	645,000	616,000	498,000

CALIFORNIA FIELDS

(Continued from Page 91)

thing like 5,000 acres have been leased by this company and other large operators have accordingly taken protective acreage. The new well, which is already under way, is on the edge of the Kern and Tulare County lines and it will be followed very closely due to the fact that the Chanslor-Canfield Midway Oil Co. encountered granite a few miles away at 2,275 feet. This test will also be of interest because of the Milham Exploration Co.'s wildcats in the Wasco gas belt a little over 20 miles south and west in the heart of the valley. The Milham's natural gas well, incidentally, is still making approximately 5,000,000 feet of dry gas daily on an exhaustion test to determine the possibilities of developing commercial gas production.

Southern California Wildcats

Wildcatting operations in southern California showed no favorable symptoms during the week, in fact this section of the state has been practically discarded by prospectors in their mad rush into the San Joaquin Valley. The Associated is still playing hide and seek with operators at Potrero and in the absence of any official announcement it is assumed that nothing definite has been determined with respect to the possibility of this area where the company logged an oil sand in November, 1926, almost a year ago. The Monterey Park Oil Co. is drilling ahead in its test well at Monterey Park and although some are inclined to believe this area does not warrant prospecting the company is going ahead on competent geological advice with a fair chance of securing commercial production. Charles A. Son is stepping right along with his Orange County wildcat and this test may bear watching some time within 30 or 60 days. The San Clemente Oil Co. is reported to be checking out very favorably with other tests drilled in the Hawthorne area and it should begin showing up very soon if commercial production is to be developed. This wildcat has promise as several other tests in this section have logged what way be edge indications of a new field. One well, the Smith Petroleum's wildcat, actually pumped 50 bbls. of oil but this well was not a satisfactory test because of a troublesome water condition which precluded an exhaustive test for oil.

JAPANESE MONOPOLY IN OIL NOW PROPOSED

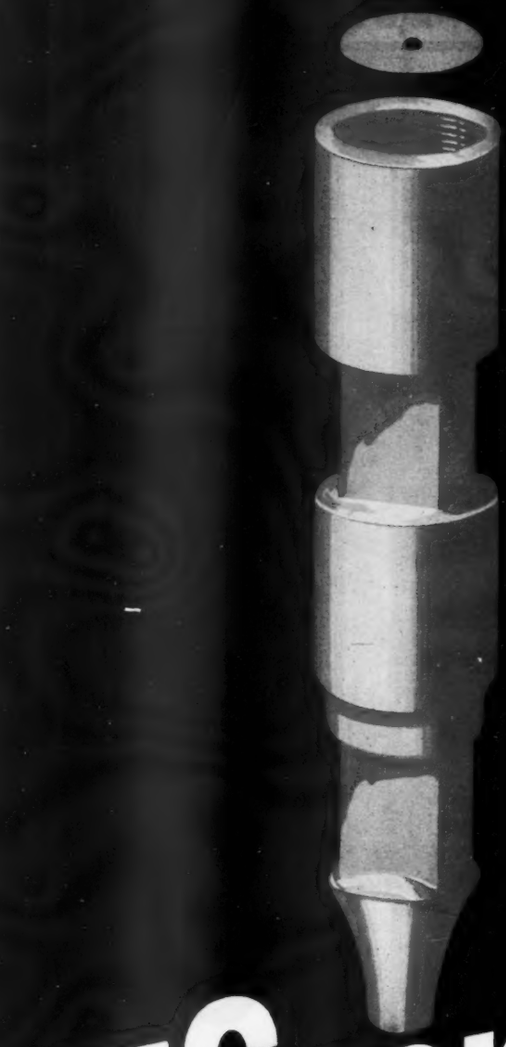
The Japanese petroleum market is growing more depressed. The fall in prices is causing considerable loss to domestic producers, who find themselves unable to operate Japanese oil wells at a profit. This has revived discussion of the control of importation, which is periodically advocated by Japanese oil interests whenever competition becomes severe.

It is proposed that a combination be formed of the principal Japanese oil interests, including the Navy Department, in which the foreign companies operating in Japan will be also invited to participate, whereby a virtual monopoly would be created for the distribution of petroleum products in Japan, and prices would be regulated so that domestic oil wells may be operated at a profit. The Department of Commerce and Industry has available appropriations amounting to about $230,820 to be expended during five years for grants in aid for oil prospecting.

The scheme allows each approved applicant to deal with 50 oil wells during the five years. Grants one exceeding 50 per cent of the prospecting expenses are to be paid to those in possession of the necessary equipment, and to those who have no equipment 50 per cent of its cost. It is stated that the scheme is to be worked out in detail, and is to be promulgated in the form of a departmental ordinance.

BELGIUM IN MOSUL OIL

Belgian participation in the French exploitation of Mesopotamian oil fields has been arranged as follows: The Belgian capitalists have established branches of the different Belgian oil companies in France, with headquarters at Paris, where they are organized as French corporations in compliance with statutes of the French Petroleum Co. In this manner the Belgian branches are able to take blocks of shares in the French company, which in turn has the right to 25 per cent in the Turkish Petroleum Co. Four Belgian groups have entered into this arrangement.



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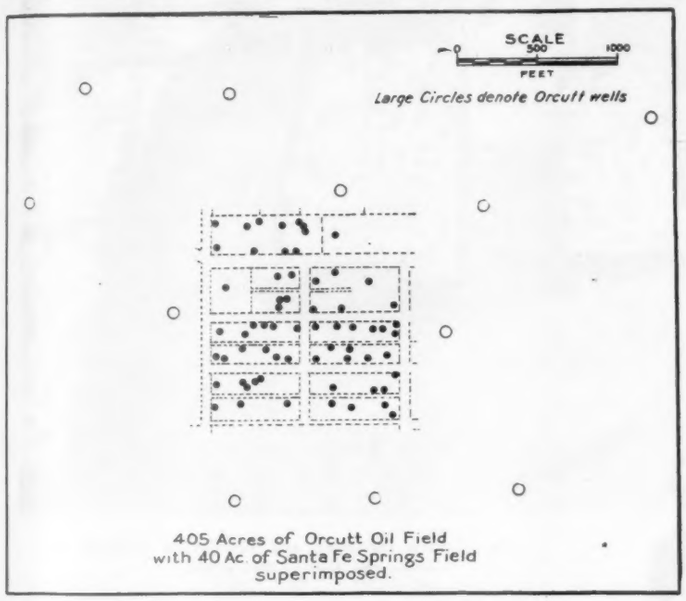
CONSERVATION WORK IN CALIFORNIA AS PRACTICED BY UNION OIL CO.

By Hugh A. Matier
Union Oil Co.

While the demands made upon our country's natural resources by Big Business are becoming heavier and more insistent with every turn of the clock, it is comforting to know that strong efforts are being made to curb wastage of this inherent wealth. Forests are being safeguarded, rivers are being harnessed, and common sense principles are being applied to the recovery of minerals, with one eye ever on the future. And the nation's citizenry is constantly being tutored on the full significance of the magic word "conserve." How Union Oil Co. of California has practiced conservation in its field operations for many years and how the application of this policy has resulted in the attaining of large reserves, well protected for future use when required, is an interesting story. It had its inception about 20 years ago, at the time new and very rich oil sands of considerable thickness and containing practically no water were discovered in the holdings of the company in the northern part of Santa Barbara County California. Previous to discovery of these sands, the shallow wells were producing California's small stream of oil from a zone of fractured shales heavily permeated with water, and it was necessary to pump the mixture and later separate the water from the oil. The newer and richer sands were found at a greater depth and thought was immediately given to the problem of preserving these sands in their purity from damage by water infiltration.



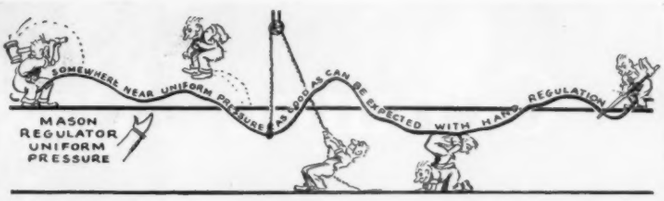
First Cement Job

After considerable experiments, the cementing process which seals the oil zones from outside interference, except where they are tapped by the drill pipe, was discovered and perfected by F. F. Hill, manager of the Union Oil Co.'s field department. This process is now the accepted method all over the world for effecting water shut-offs in oil wells and but for this method, production below 4,000 feet would be impossible. Not only, however, did the company practice conservation of oil by cementing its well, but also in the spacing of these wells. Its holdings in the Santa Maria section amount to approximately 20,000 acres. Its concern was not to see how quickly this area could be drained of its oil, but rather to determine how the oil could be best conserved in its natural reservoir, releasing only that portion sufficient to meet its daily needs. In line with this policy, well-spacing received much thought. Development was carried out along lines calculated to establish an even rate of production which would extend over a long period of years. Instead of drilling 60 wells to every 40 acres, as was the practice at Santa Fe Springs and in other Southern California fields where the town-lot influence exerted itself, one well was deemed sufficient for every 40 acres. On this basis of spacing it was hoped, and subsequent results proved, the gas pressure used to lift the oil would not be unduly disturbed; the danger of migration of water into the oil sands, which is a concomitant of closely spaced wells, would be prevented and a more economical operation of the field made possible.

Slow Decline

Production from these wells during the 20 years they have been in operation was held up remarkably well and is in direct contrast to the fate of many wells drilled in town-lot fields where the yield has fallen off suddenly after the gas pressure has been dissipated. Production curves of the Union's wells in the area under discussion was of the ideal decline curve of the petroleum engineer, so rarely found to work out in practice. With the development of the new Los Angeles basin fields and the subsequent flood of oil which these fields released, the company began looking for ways and means of curtailing production where it could safely be done. The group of fields near Orcutt in Santa Barbara County was selected, and in May, 1922, the majority of the producing wells in that locality were accordingly shut in. The shutting in of any oil field had been deemed by many oil experts as a rather hazardous undertaking, especially where the wells were old, it being argued that the mineral waters eat away the protecting iron casing, thus admitting upper water and also serving to release the gas pressure and to allow secondary or edge water to creep up the flanks and flood the oil sands with disastrous results. It was also stated that, provided the casing was tight, the rock pressure would build up to such a degree that the old corroded casings would not be able to stand this high pressure. In the face of these pessimistic expressions, the Union Oil Co.'s field department, confident in the efficacy of their cement jobs of 15 to 20 years ago, assured the management that this shutdown could be done without endangering these reserves. It should be understood that, just as an individual with a substantial bank balance can face the vicissitudes of everyday life with equanimity, so in like measure can an oil company regard its underground oil reserves as so much cash in the bank.

While it was at first thought that this curtailment measure would be but for a



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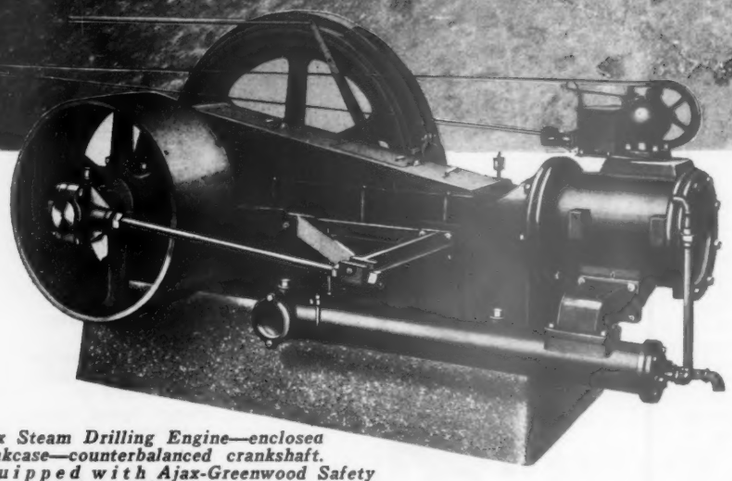

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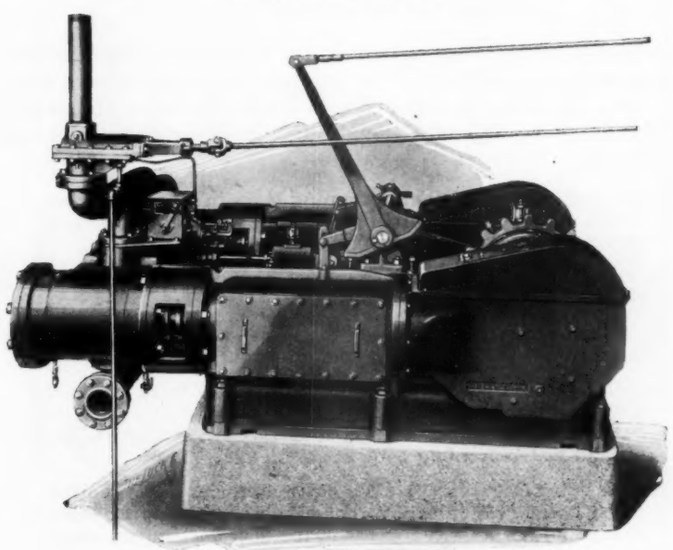

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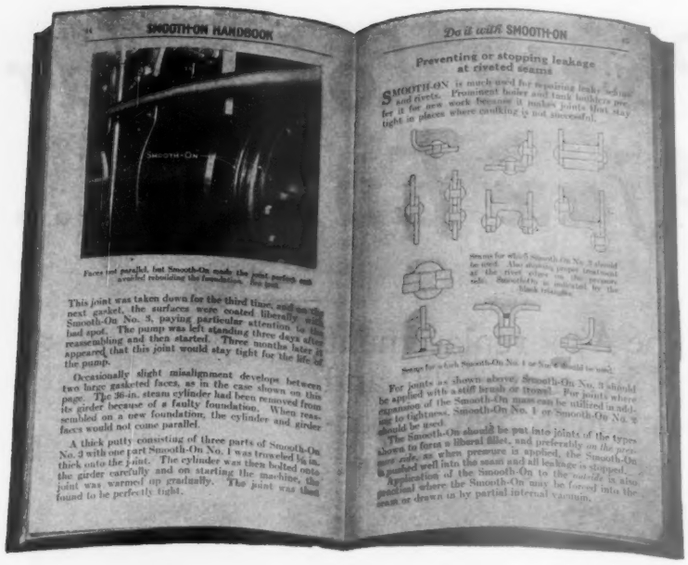

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limited period, the continued success of the driller throughout the oil areas of Western United States in discovering new fields, in which ownership was often divided into small parcels of land with consequent intensified development, prolonged the day when the oil from these shut-in wells would again be released. After these wells had been shut in for 5 years, the production department deemed it advisable to open a central section of the field for production, in order to determine by actual results what effect the shut-in had produced. Accordingly, on June 1, 1927, pumping was again resumed on a number of these wells which had been dormant for 5 years. The results showed that a very considerable increase of oil was obtained from nearly every well, this increase being in some cases over 100 per cent. Nor was this increase a flash in the pan, as production after two months of steady operation has shown the new production rate to be one of stability.

The first few days of operation showed a small increase in the amount of water in a few of the wells, but this water percentage speedily returned to normal, and the oil-water ratio for the whole district is now exactly what it was in 1922. The theory on which a safe shut-in of these wells was originally proposed was as follows: It was accepted that in the vicinity of each well a cup-shaped, voided oil area existed due to the pumping out of the oil over a long period of time. This area was probably of quite an extent, as the thickness of the oil-saturated sands averaged around 400 feet. From the sides of the cup, oil and gas would emerge and fill up the bottom of the well, to be removed by the daily pumping operations of as many hours as was necessary to lower the fluid level to the bottom of the tubing. Although these wells had reached an age when many wells of similar age in other parts of the state had been abandoned, they had a gas production amounting in many cases to 500,000 feet per day due to the fact that there was such a large area free of oil through which it could get easy passage to the perforated casing of the well. It was believed that as a result of the shut-down, the oil would again fill up the voided area and establish sufficient obstruction to any small amount of water which might enter the cemented string through minor leaks in its upper cemented section, and also decrease the daily gas production. It was, therefore, no surprise on the reopening of these wells to find that the gas production had very greatly declined, but rather it was an index to the fact that things had come about just as they were theoretically supposed to do.

High Gas-Oil Ratio

The oil-gas ratio, which necessarily had been fairly high when the shut-down occurred, fell off to about 700 feet of gas to the barrel of oil recovered upon reopening. That this was not due to the exhaustion of the gas was proved by shutting a well in again when the pressure built up to 450 pouns.. Naturally, if pumping operations were prolonged, the cup-shaped voided area would gradually grow in size with a corresponding liberation of a greater amount of gas. Possibly the oil-gas ratio in this field is 1,000 cubic feet for each barrel of oil. There is therefore a great deal of potential vigor existing in the field as a whole and the denudation exists only in a limited area around the actual well.

Some authorities have voiced the opinion that to recover the greatest quantity of oil from a field, as many wells as possible should be drilled. Theoretically this may be true, but the application of such procedure results in economic waste. It means bringing crude oil out of the ground, its natural reservoir, in quantities that are wholly out of tune with demand, with demoralizing results on the entire industry. It means that storage facilities have to be constructed to absorb the excess production. It means also, assuming it to be true that the greatest oil recovery results from intensive drilling that its recovery is brought about in a most uneconomic manner. It may also mean that a very considerable portion of the oil may be left in the ground irrecoverable on account of the undue extraction of gas with consequent decrease of formation pressure, which pressure is necessary to force the oil into the hole made by the drill. In the final analysis, therefore, recovery cost per barrel, since it is reflected in the ultimate cost to consumers, should be the dominating factor in oil field development. Wherever possible, it has been the policy to practice intelligent spacing of the wells with the view to longevity of production and consequent reduction of cost per barrel of oil produced. Not only is the conservation of oil a very live question with the Union Oil Co.'s field management, but it should also be known that not a cubic foot of gas is wasted. After the extraction of gasoline from the gas which comes along with the oil, the dry gas is returned to the formation from whence it came, being forced there by compressors. The object of this is to aid in keeping up the "pep" and vigor of the field so that its productive life may be extended.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended August 27 totaled 1,501,000 bbls., a daily average of 214,428 bbls., compared with 1,362,000 bbls., a daily average of 194,571 bbls. for the week ended August 20 and a daily average of 182,607 bbls. for the four weeks ended August 27.

	Week ended August 27
At Atlantic Coast ports:	
Baltimore	158,000
Boston	125,000
New York	676,000
Philadelphia	65,000
Others	352,000
Total	1,376,000
Daily average	196,571
At Gulf Coast ports:	
Galveston district	25,000
New Orleans and Baton Rouge	100,000
Total	125,000
Daily average	17,857
At all United States ports:	
Total	1,501,000
Daily average	214,428
Daily average four weeks	182,607

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended August 27 totaled 593,000 bbls., a daily average of 84,714 bbls., against 1,029,000 bbls., a daily average of 147,000 bbls., for the week ended August 20, and a daily average of 103,642 bbls. for the four weeks ended August 27.

	Week ended August 27
At Atlantic Coast ports:	
Boston	95,000
New York	348,000
Philadelphia	150,000
Total	593,000
Daily average	84,714
Daily average four weeks	103,642
Distribution of total California receipts is as follows:	
Crude	365,000
Gasoline	150,000
Gas oil	78,000
Total	593,000

OIL OUTPUT IN PUNJAB

Recent unofficial report is to the effect that the Attock Oil Co. is now producing close to 700 bbls. of crude a day in its Punjab fields, India, although less than a year ago the production of this field was only about 290 bbls. per day. The company's refinery is located at Rawalpindi and has a capacity of 1,000 bbls. a day; it is connected with the field by about 50 miles of pipe lines. The crude produced here has a high gravity with a paraffin base. There is a high gasoline content, about 25 per cent gasoline being obtained at present, with a possibility of obtaining 35 per cent by more efficient methods of refining.

OIL SEARCH IN BRAZIL

Reconnaissance trips and geological studies in the State of Espiritu Santo continues, and it is understood drilling equipment has been ordered. The concessionaries expected to begin drilling in March or April, but have not yet done so. A geologist employed by them has stated that oil seepages were found in several places in the state and that the most promising fields are located in the vicinity of Riacho.

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INCREASE IN OIL INVENTORIES WITH EMPHASIS ON LIGHT OIL

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Sept. 3.—Addition to stocks of petroleum in the United States during the year ended June 30, 1927, averaged only 98,400 bbls. daily. This figure includes both crude and refined oil. There was net addition to crude stocks of 79,000 bbls. a day, and an addition to refined, including natural gasoline, of 19,400 bbls. a day. The only decrease was shown in stocks of heavy crude (including California fuel oil), this averaging 24,000 bbls. a day.

The daily average of 98,400 bbls a day represents a goal at which the petroleum industry must aim during the 12 months ended June 30, 1928, namely, to reduce stocks at least by that much, in order to arrive at the balance which existed on June 30, 1926, when prices of crude and refined oil were considerably higher than they are at present.

That the outlook is uncertain as regards the ability of the oil industry to reach that goal is evident, in view of the fact that the course of production and consumption over the next nine months is purely a matter of conjecture. It now appears that the Seminole oil field is ready to decline naturally. How fast that decline will be is conjectural, and it is also problematical whether the decline will be offset by increases in other fields or whether the country's decrease will be accelerated by declines elsewhere, as in California.

The table below shows many interesting facts with regard to the record of the oil business during the year ended June 30, 1927. These statistics are taken from reports of the United States Bureau of Mines, except the daily averages which are computed from the Bureau of Mines totals.

Additions to Stocks

The situation as regards light oil during the period was much more unfavorable than with reference to heavy oil. There was an addition to light oil stocks of 37,569,000 bbls. (this includes all crude of 24 gravity and over.) The daily average increase was 103,000 bbls. for the 12 months' period.

Stocks of heavy crude, including fuel oil in California, actually declined during the period, the total being 8,703,000 bbls. and the daily average 24,000. This was the only decrease among crude and refined oil stocks.

The light oil situation in California, however, went the reverse of that east of the Rockies. While Seminole was adding to the supply of high-grade crude east of the Rocky Mountains, California was drawing on light oil stocks to the extent of 8,556,000 bbls., or at the daily rate of a little over 23,000 bbls. This at least cut the gain in light oil storage in the whole country down from 46,125,000 bbls. east of the Rockies to 37,569,000 bbls. for both sections combined.

Almost the reverse situation prevailed in the two areas as regards heavy oil. Stocks of heavy crude were reduced east of the Rockies by 11,855,000 bbls., while in California there was an addition of 3,152,000 bbls., the net decrease for the country amounting to 8,703,000 bbls.

Total stocks of light and heavy crude combined at the end of June, 1927 amounted to 433,116,000 bbls. a gain of 28,866,000 bbls. over the end of June, 1926, or only 7.1 per cent. At the end of June of this year California was carrying approximately 31.8 per cent of the entire crude stock of the country. About 10 years previously, that is, at the end of 1917, California accounted for 28,000,000 bbls. of the total of 122,000,000 for the entire country, or only 22.9 per cent. It must be remembered that the California figures for 1926 and 1927 include fuel oil, figures for which for some reason are not given separately at the present time.

Because of California's present strong position as regards stocks of oil, developments in that state are looked upon as important in determining the course of oil prices, along with the future of Seminole and west Texas, and other developments bearing on the stability or instability of the oil business. Even a gradual decline in California's output would do much toward righting conditions in the petroleum industry of the country.

Emphasis on "Light" Oil

The effect of Seminole has been sharply emphasized by the fact that Seminole oil is of especially high quality. Seminole has boosted both light oil and gasoline stocks. An inventory of the situation shows that, taking all crude and refined oil of approximately 24 gravity and over, the gain in stocks for the year ended June 30, last, averaged 103,000 bbls. a day, while stocks of crude and refined below 24 gravity actually fell off by 24,000 bbls. daily.

The following table shows daily average changes approximately by gravity (figures in barrels):

Year Ended June 30, 1927

	Daily Averages—Increase	Decrease
24 and above—		
Light crude	103,000	
Gasoline	8,000	
Kerosene	2,000	
Net gain	113,000	
Below 24—		
Heavy crude		*24,000
Gas and fuel oil	†11,000	
Lubricating oil	1,000	
Net loss		12,000

*Includes fuel and gas oil in California.
†Except California.

The foregoing figures indicate that the greatest unbalance is in the higher gravity oil and products which is due obviously to Seminole with its peak output of over 500,000 bbls., reached, incidentally, since the close of the annual period referred to. This also emphasizes that if Seminole production drops rapidly without an offsetting increase in light oil output elsewhere, the general petroleum situation should enjoy a marked improvement.

In the following table are figures showing stocks of crude and refined oil on hand at the close of June, 1927, and June, 1926, with increase or decrease; also daily average changes for the period (figures in barrels):

STOCKS

	June 1927	June 1926	Increase	Decrease
Light crude—				
California	26,898,000	35,454,000		8,556,000
East of California	268,217,000	222,092,000	46,125,000	
Total	295,115,000	257,546,000	37,569,000	
Heavy crude—				
California	90,516,000	87,364,000	3,152,000	
East of California	47,485,000	59,340,000		11,855,000
Total	138,001,000	146,704,000		8,703,000
Total crude	433,116,000	404,250,000	28,866,000	
PRINCIPAL REFINED PRODUCTS				
Gasoline	43,768,000	40,779,000	2,989,000	
Kerosene	8,567,000	7,881,000	686,000	
*Gas and fuel oil	26,590,000	22,554,000	4,036,000	
Lubricating oil	7,628,000	7,314,000	314,000	
†Total	129,370,000	122,630,000		
Crude and refined	563,457,000	527,530,000	35,927,000	

*East of California. †Includes wax, coke and other products.

Gasoline accounted for approximately 10 per cent of the stocks of all oils in the United States at the close of June of this year, and of the refined products was the largest item. This indicates the present dependency of the industry on that product. With gasoline prices at the

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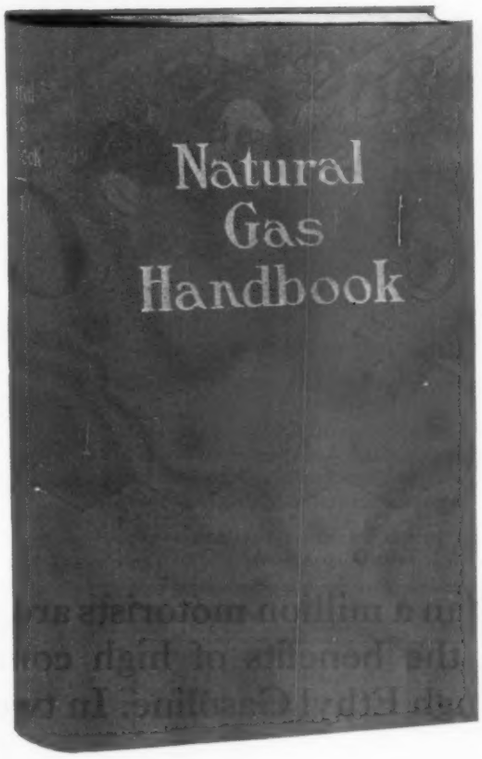

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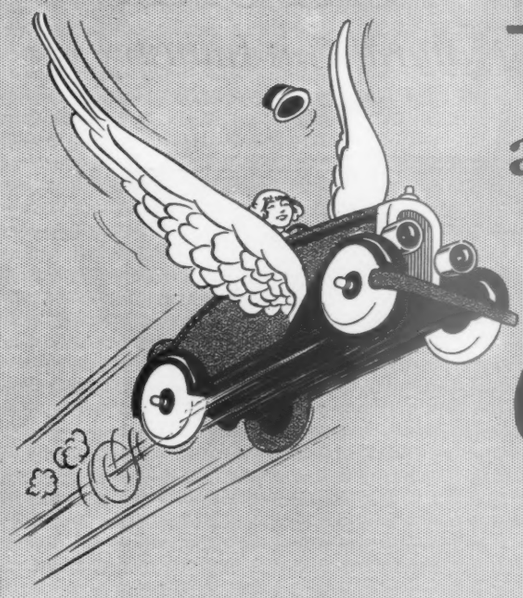

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"Why then," you may ask, "has not the principle of high compression been applied to stock cars?" Up to now stock cars have had to conform with the compression limits of ordinary gasoline. And ordinary gasoline has one inherent fault which refining processes cannot eradicate. It "knocks" (i. e. explodes too quickly and loses power) when compressed beyond certain limits.

The principle of high compression is easily understood. The tighter you pack the powder charge in a muzzle loading gun, the greater the force given the bullet. Similarly, the tighter gasoline vapor and air are compressed in the combustion chamber (the space between the top of the cylinder and the top of the piston) before ignition, the greater the power from the explosion.

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lowest levels in years, the industry can know where to look for any possibility of improvement.

Incidentally, the imports are almost negligible as a factor in the present depression, in as much as they consist largely of heavy oil. The amount of light oil coming in during the period under discussion was too small to affect the market here.

OTTAWA GIVES WARNING AGAINST "OIL FINDERS"

CHATHAM, Ontario, Sept. 3. — The Natural Resources Intelligence Service of the Department of the Interior at Ottawa has issued a warning against "self-styled oil engineers" who may offer their services to farmers and landowners to test the soil by a chemical or photographic process for determining whether or not oil underlies the property. The warning calls attention to warnings recently issued along the same line by the Department of the Interior at Washington, and adds:

"The operators, who charge a fee of $25 for an 'examination,' are stated to be claiming that they are experts working under the supervision of the Government. Inquiry in the department at Washington has of course brought out the fact that no such specialist has ever been connected with its staff as a geologist, nor does the Geological Survey know of any method by which the presense or abscence of oil a few hundred or a few thousand feet beneath the surface can be determined by a test of the oil, chemically, photographically or otherwise.

"It may easily happen that these operators when they find that the game is up where they are operating will make their way across the border into Canada and endeavor to interest farmers and others in territories adjacent to the proven fields of Ontario, New Brunswick and Alberta. They have been known to be working as close to the international border as Michigan. Instances of their operations should be immediately reported, as apart from the loss of fee charged, much harm in the way of false hopes aroused and consequent speculation might easily result from taking the advice of these self-styled experts too seriously."

PRODUCTION IN BURMAH CONTINUES TO DECLINE

During the first three months of the current year Burma produced 59,666,686 imperial gallons of crude petroleum. If the yield for the remainder of the year is continued at the same rate, the output for 1927 will reach 238,666,744 gallons, or 12,000,000 below that for 1926. The decline in Burmese production of petroleum has been consistent since 1921, when it amounted to 296,092,057 gallons, from which it dropped to 262.828,930 gallons in 1925 and 250,040,471 in 1926. The output during the first quarter of 1927 consisted of 34,446,782 gallons from Yenangyaung, 23,122,642 from Singu, and 2,097,262 from other fields.

The decreased output of petroleum in Burma is chiefly attributable to the exhaustion of the wells in the Yenangyaung field, in which production declined from 184,420,141 gallons in 1921 to 145,731,612 in 1926. The Singu field on the other hand, has held its own, having produced more than 95,000,000 gallons in 1925 and shown a slight advance in 1926. The output for both years, moreover, was larger than in any preceding year since 1921. The field, controlled by the two largest companies operating in Burma—the Burmah Oil Co. and the British Burma Petroleum Co.—has been held more or less in reserve. Exploitation has been concentrated largely in the Yenangyaung area, which contains hundreds of hand-dug wells operated by individuals or small concerns, whose output is sold to the large companies.

SOVIET REPORT ON SALES

The Soviet Naphtha Syndicate reports that it has already sold two-thirds of the total quantity of oil products which it proposes to export in the coming fiscal year. In a message from Tiflis it is stated that Ceylon and British India, which have hitherto bought American oil will get their supplies in the coming year from the Batum kerosene refinery. The syndicate also reports that it has concluded an agreement for the supply of Soviet gasoline to South Africa.

STEEL PRODUCTION RATE RUNNING ABOUT SAME AS TWO YEARS AGO

By B. E. V. Luty

PITTSBURGH, Pa., Sept. 5.—The best measure of steel industry at present activity is the rate at which steel is being produced, as there are no forward orders such as would definitely promise higher operations later, production being in accordance with the present rate of buying. The rate of steel production is about 15 per cent under the rate at this date a year ago, but is approximately equal to the rate two years ago.

The rate is really not a poor rate, at long range view, but there is a great deal of complaint about business being dull, since the steel trade is habituated to expecting better things year by year, and holding a stationary position seems like going backward.

Much, if not all, of the decrease from a year ago can be found in three lines, oil and gas field demand, railroad demand and automobile trade demand. Automobile production is off about 20 per cent from a year ago. Railroad buying has been light this year in cars and locomotives, but it was rather light last year. In rails the buying has been very light, only fair sized orders having been placed for the first half of this year, while there has been little supplementary buying, and the rail mills are estimated to be operating at only 30 per cent. Last year's rail production was particularly heavy, being the greatest since 1913. The light demand for oil country tubular goods, compared with that of last year, is well known, the only exception being that there was a large amount of line pipe business, while this is now nearly all worked off books. Bookings in oil storage tanks reported to the Department of Commerce by 51 steel plate fabricating companies were 17,199 tons in July, 7,402 tons in June and 10,855 tons in May, making an average of 11,819 tons a month, against a monthly average in 1926 of 14,614 tons.

There is no improvement in demand for oil country tubular goods. There is a moderate volume of small lot business, but altogether this is a poor year in well material, and in line pipe business has been light for several months, with little of the old tonnage left to be filled. Demand for merchant or standard pipe continues to be of quite fair proportions, with perhaps a little picking up just now. All told, demand this year to date in standard pipe has run, say, 10 per cent under that of last year. Estimates of the decrease in oil country goods are not obtainable, but obviously the decrease in that quarter is much greater.

Pipe mills are only estimated to be operating at about 60 per cent, but that is a better rate than is shown by the wire mills or the rail mills. Few finishing lines are running above 70 per cent.

The valley pig iron market continues in dull condition, with prices well held at $18.50 for Bessemer, $17.25 for basic and $17.50 for foundry iron, f.o.b. valley furnaces. The Standard Sanitary Manufacturing Co. has had an inquiry out for 2,000 to 5,000 tons for fourth quarter, but is expected to buy a larger quantity as the tonnage named is far below its average. Coke and scrap continue dull.

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Size, Inches	Size Gas Outlet	Weight, Pounds
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8¼x 5⅛	1½ or 2	160
8¼x 5⅛	2½ or 3	155
8¼x 6¼	1½ or 2	160
8¼x 6¼	2½ or 3	180
8¼x 6⅝	1½ or 2	155
8¼x 6⅝	2½ or 3	190
9⅝x 7⅝	1½ or 2	195
9⅝x 7⅝	2½ or 3	240
10 x 6⅝	1½ or 2	230
10 x 6⅝	2½ or 3	290
10 x 8¼	1½ or 2	200
10 x 8¼	2½ or 3	250
11⅝x 9⅝	1½ or 2	245
11⅝x 9⅝	2½ or 3	320
12½x 8¼	1½ or 2	310
12½x 8¼	2½ or 3	390
12¼x10	1½ or 2	250
12¼x10	2½ or 3	330
13½x12½	1½ or 2	300
13½x12½	2½ or 3	380
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GEOTHERMAL PROSPECTING FOR OIL NOW BEING TESTED IN GERMANY

A geothermal method of exploring for petroleum is outlined in an article in Gluckauf. Some work has been done by the United States Bureau of Mines on the relationship of rock temperatures to petroleum occurrences, but the German data seems to be of importance.

The method is recommended for application in areas suspected of being petroliferous, but lacking in surface evidence. It is based on the fact that, for about every 100 feet in depth, the rock temperature normally increases by 1 degree Centigrade. The author maintains that invariably the increases in rock temperature on oil fields to the extent of 1 degree Centigrade occur at smaller intervals of depth than in the normal. The testing of this fact seems to have been confined to German petroliferous areas, mainly in the Hanover district, a relatively small area.

The reason given for a higher rock temperature in the vicinity of oil fields is attributed to chemical action, principally the oxidation of petroleum. The exothermic character of petroleum oxidation imparts heat to the surrounding rocks.

In deep drillings around Hamburg, the temperature increases observed in sinking were 1 degree Centigrade for about every 160 feet, but, on the other hand, in the neighborhood of Neuengamme, where natural gas is found, an increase of 1 degree Centigrade occurs at about every 80 feet of sinking. A year or two ago, a drilling in Sottorf, in which crease 1 degree Centigrade for every 65 feet of sinking, and in another well drilled 300 meters to the east, which flowed petroleum for a short time, the increase in rock temperature was 1 degree Centigrade in every 56 feet.

In the Celle district individual potash mines have a rock temperature higher than that of other mines in the same field in which the rock temperature approximates to the normal. In the potash mines of Beienrode, at 1,000 meters in depth, the temperature amounts to 37 degrees Centigrade, which is in fair agreement with the normal if the average surface temperature is regarded, while in the potash mines of Steinforde, which is on the same salt "horst," there is an unusually high rock temperature of about 37 degrees Centigrade at 730 meters.

May Indicate Oil

As these mines lie near the Steinforde-Wietze petroleum occurrences, it seems fairly conclusive, the London Petroleum Times says, that there is a casual connection between the presence of petroleum and the higher rock temperatures.

In the salt intrusion at Wathlingen, the temperature in the potash mines is also above the normal, which the author attributes to the proximity of the petroleum of Hansigen-Nienhagen.

The Odesse and Wilhelmshall-Olsburg potash mines also show an unusually high rock temperature, which may be attributed to the vicinity of the petroleum of Olheim and Olsburg-Ober. An exception is shown by the temperature in the Adolfsgluck mine where, although petroleum is found quite near, rock temperature is a little above normal. The author explains by saying that the oil at this point is so completely enclosed by impervious rock it is entirely protected from oxidation, and no heat is generated from that cause.

In some cases abnormally high rock temperature can be traced to causes other than petroleum oxidation. The Einigkeit potash mines are surrounded by Posidonien schists which have a high bitumen content. The abnormally high rock temperature observed in these mines doubtless originates in part from the oxidation of the bitumen in the schists, but in as much as natural gas is found in quantity in the mines, it is likely that petroleum exists at no great distance from the salt intrusion.

There seems to be, therefore, considerable evidence that relatively high rock temperatures are caused in many cases by the nearness to petroleum, the rock temperature increasing the nearer the petroleum is approached, and declining as the petroleum is left behind.

These rock temperatures can, therefore, be used to assist in the location of petroleum. It is nearly always possible to distinguish the causes of high rock temperature other than that due to petroleum. Volcanic action, hot springs, recent tectonic disturbances, and underground friction, as causes of high rock temperature, are generally apparent enough.

Shallower Tests

The cost of deep drilling in exploring for petroleum is such that the failure to obtain favorable results means a serious dead loss. The author believes that the cost of one such well to a depth of 3,000 feet, would at least equal that of 20 wells drilled, say, to 600 feet. He suggests that much more valuable results would be obtained on an average by drilling 20 shallow wells scattered over a fairly wide area, and ascertaining rock temperatures than is possible by sinking one deep well which, after all, gives information at only one point. The rock temperatures obtained in the shallow wells would show by their differences the direction in which the petroleum pool existed, assuming that one existed, and would point the spot for drilling into the petroleum beds with the greatest probability of success. Assuming that the petroleum pool existed about in the center of the district tested, the higher rock temperature found in the wells on it, or near to it, would accurately locate it. In the case of a salt dome with petroleum on one or the other of its flanks, but barren elsewhere, the method would easily indicate where it might be sought, and thus save the heavy expense of an indefinite number of more or less deep wells in locating it.

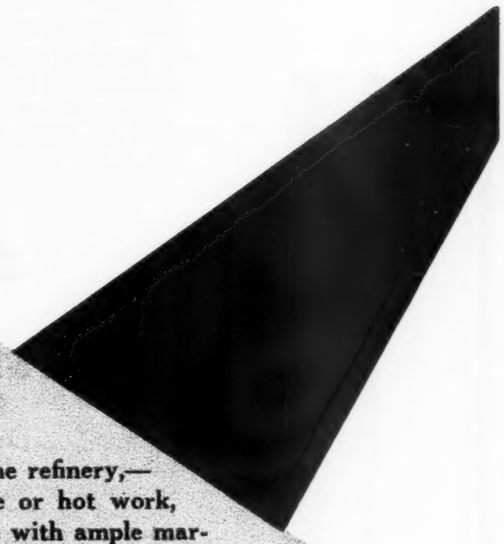
It is recommended that the method be used in conjunction with all other useful methods of prospecting for oil, such as the various geophysical methods. One thing of great importance in the application of the geothermal method is the correct measurement of the rock temperatures.

COLOMBIA EXPORTS

Petroleum shipments from Cartagena during the first six months of 1927 amounted to 5,209,396 bbls., high point being reached in May with 1,099,176 bbls., and low in June with 780,945. The June exports included 76,099 to Baltimore and 91,193 to New York, with 498,870 for Canada and 46,837 for Italy. Although the work work of looping the pipe line from producing wells at Barranca Bermeja has been completed the full capacity of the line has not been used so far, the oil continuing to arrive at the former rate of about 30,000 bbls. per day.

OIL FROM COAL TEST

The British Fuel Research Board has just issued its annual report, in which it is stated that while distinct advance is being made in the matter of "low" carbonization it will probably be many years before any appreciable fraction of the 140,000,000 tons of coal burned in the raw state in Great Britain is treated by this method. There are about 200 methods of low-temperature carbonization, and it is emphasized that it is unlikely that any one system will ever be adopted to the exclusion of all others. Practical test of low carbonization is to be given by the Gas Light & Coke Co. (Ltd.), which has offered a site for a 100-ton a day plant to be run for three years, the government paying the original cost of erection. A subsidiary company is to be formed, the gas company to act as managers and bear running costs, and to have the option to purchase the plant at the end of 1930.



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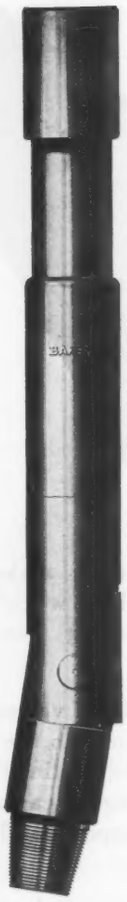

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Government Petroleum Statistics for 1926

By G. R. Hopkins

According to final figures compiled by the Bureau of Mines, Department of Commerce, from the annual canvass of producing and pipe line companies, the production of crude petroleum (oil brought to the surface) in the United States in 1926 amounted to 770,874,000 bbls., a new record figure. This represents an increase over 1926 of 7,131,000 bbls., or nearly 1 per cent. Of the total production, 633,726,000 bbls., or 82 per cent, was classed as light oil. This indicates a slight increase in the proportion of light oil production of 1926 over 1925, due undoubtedly to the decline of Smackover, the principal heavy oil field of the country.

The major portion of the increase in production in 1926 was recorded in Texas. Production in California, the leading producing State, dropped off approximately 8,000,000 bbls., but Oklahoma registered a gain of about 2,500,000 bbls. and established a new record. The most important fields from the standpoint of new production were Spindletop (deep sand) and Panhandle in Texas and Ventura Avenue and Huntington Beach in California. The most important discoveries of the year were the Seminole Field of Oklahoma and the Seal Beach Field of California.

Imports of crude petroleum in 1926 amounted to 60,382,000 bbls., a slight decrease from 1926. A material decrease in imports of Mexican crude petroleum was nearly compensated by increased shipments from South America.

Shipments of crude petroleum through the Panama Canal to eastern ports in the United States decreased in 1926, but shipments of refined products were considerably higher.

Total stocks of crude petroleum east of California were reduced from 301,412,000 bbls. at the beginning of the year to 284,168,000 bbls. December 31. This decrease of approximately 17,000,000 bbls. was the net result of a 6,000,000-bbl. increase in refinery stocks and a 23,000,000-bbl. decrease in other stocks. Producers' stocks or stocks at wells east of California were reduced during the year from 7,560,000 bbls. to 5,904,000 bbls., the lowest point since the early part of 1922. Stocks of refinable crude in California were reduced about 30 per cent in 1926, while heavy stocks in that State were increased only 1,500,000 bbls.

The total value at the wells of the crude petroleum produced in the United States in 1926 was $1,447,760,000, an increase over 1925 of 13 per cent. The average price per barrel was $1.88, a gain of 20 cents over 1925. Outside of a small decrease in average value in the majority of Appalachian States, the only other cause of decreased value was in Montana, where it fell from $1.57 in 1925 to $1.32 in 1926.

On December 31, 1926, there were 318,600 producing wells in the United States, a gain of 12,500 over the preceding year. The average production per well per day was 7.4 bbls., the highest figure ever recorded. The total number of wells drilled in 1926 was 29,319, of which 19,013, or 65 per cent, were oil wells; 2,341, or 8 per cent, were gas wells, and 7,965, or 27 per cent, were dry holes.

The total world production of crude petroleum in 1926 amounted to 1,096,000,000 bbls., an increase over 1925 of 27,000,000 bbls. Venezuela, which nearly doubled its output, recorded the largest increase in production of any of the large producing countries. The United States produced 70.3 per cent of the total in 1926, as compared with 71.5 per cent in 1925.

Supply and demand of all oils: The balance sheet of the combined supply and demand of crude petroleum, refined products, natural-gas gasoline and benzol in 1926 shows the following comparisons with 1925: A gain of 2 per cent in new supply; an increase of 8.5 per cent in total demand and of 7 per cent in domestic demand; and a decrease in total stocks of nearly 25,000,000 bbls.

SUMMARY OF SUPPLY AND DEMAND OF ALL OILS IN 1926, BY MONTHS*
(Thousands of barrels of 42 U. S. gallons)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Supply:														
Domestic production:														
Crude petroleum	59,981	54,892	60,880	60,371	62,822	61,789	65,168	67,009	65,782	69,664	69,891	72,625	770,874	763,743
Daily average	1,935	1,960	1,964	2,012	2,027	2,060	2,102	2,162	2,193	2,247	2,330	2,343	2,112	2,092
Natural-gas gasoline	2,524	2,381	2,693	2,609	2,626	2,548	2,629	2,664	2,657	2,907	2,967	3,100	32,305	26,307
Benzol	181	166	179	171	176	171	179	179	174	181	179	176	2,112	1,857
Total	62,686	57,439	63,752	63,151	65,624	64,508	67,976	69,852	68,613	72,752	73,037	75,901	805,291	791,907
Daily average	2,022	2,051	2,057	2,105	2,117	2,150	2,193	2,253	2,287	2,347	2,435	2,448	2,206	2,170
Imports:														
Crude	4,688	3,743	7,216	5,906	4,501	5,571	5,185	5,332	4,350	3,860	5,043	4,987	60,382	61,824
Refined	1,251	2,001	1,522	1,616	2,017	2,344	1,992	2,361	1,132	1,765	1,619	1,318	20,938	16,376
Total new supply all oils	68,625	63,183	72,490	70,673	72,142	72,423	75,153	77,545	74,095	78,377	79,699	82,206	886,611	870,107
Daily average	2,214	2,257	2,338	2,356	2,327	2,414	2,424	2,501	2,470	2,528	2,657	2,652	2,429	2,384
Change in stocks all oils	†1,237	217	1,711	†11,003	†2,594	†4,782	†2,667	†5,885	†3,004	5	921	3,554	†24,764	30,120
Demand: Total	69,862	62,966	70,779	81,676	74,736	77,205	77,820	83,430	77,099	78,372	78,778	78,652	911,375	839,987
Daily average	2,254	2,249	2,283	2,723	2,411	2,574	2,510	2,691	2,570	2,528	2,626	2,537	2,497	2,301
‡Exports:														
Crude	1,183	1,049	965	1,308	1,842	1,226	1,726	1,083	1,388	1,010	1,344	1,283	15,407	13,337
Refined	9,742	8,999	8,276	10,688	8,816	9,960	8,762	10,709	9,306	7,630	11,964	10,235	116,087	100,216
§Domestic demand	58,937	52,918	61,538	69,680	63,078	66,019	67,332	71,638	66,405	69,732	65,470	67,134	779,881	726,434
Daily average	1,901	1,890	1,985	2,323	2,035	2,201	2,172	2,311	2,214	2,249	2,182	2,166	2,137	1,990
Excess daily average domestic production over domestic demand	121	161	72	§218	82	**51	21	**58	73	98	253	282	69	180
Stocks (end of month):														
Crude:														
**East of California: Light	291,628	230,730	228,161	226,737	224,669	221,665	221,535	220,240	220,103	222,137	223,828	225,404	225,404	
Heavy		58,186	60,030	59,673	59,517	59,402	57,137	57,719	57,885	55,310	53,321	52,860	52,860	293,852
California: Light	44,197	44,871	43,973	‡‡38,634	37,192	35,454	33,548	32,149	30,494	30,390	30,051	30,861	30,861	44,451
††Heavy	86,614	86,744	88,466	‡‡85,656	88,184	87,364	88,092	87,772	87,353	87,529	87,440	87,270	87,270	85,783
Total crude	422,439	420,531	420,630	‡‡410,700	409,562	403,885	400,312	397,880	395,835	395,366	394,640	396,395	396,395	424,086
Natural-gas gasoline at plants	405	419	490	507	588	650	631	590	493	488	462	455	455	326
Total refined	120,780	122,891	124,432	123,342	121,805	122,638	123,563	120,151	119,289	119,768	121,441	123,247	123,247	120,449
Grand total stocks all oils	543,624	543,841	545,552	‡‡534,549	531,955	527,173	524,506	518,621	515,617	515,622	516,543	520,097	520,097	544,861
Bunker oil	3,746	3,232	3,402	4,060	2,729	4,038	3,940	4,126	4,040	4,330	3,953	4,066	46,662	42,827

*Includes wax, coke and asphalt converted to barrels. †Decrease. ‡Includes shipments to noncontiguous territories. §Inclusive of bunker oil, laden on vessels engaged in foreign trade, for which see below. ‖Deficiency. **Exclusive of producers' stocks. ††Includes fuel oil. ‡‡Fire loss 8,215,000 bbls.

CRUDE PETROLEUM PRODUCED IN THE UNITED STATES IN 1926 BY STATES (Thousands of barrels of 42 U. S. Gallons).

	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Arkansas	5,409	4,852	5,137	5,310	5,335	4,977	4,997	4,861	4,611	4,516	4,194	4,133	58,332	77,398
*California	19,047	17,175	18,826	18,056	18,716	18,276	18,790	18,905	18,218	19,020	19,249	20,395	224,673	232,492
Colorado	161	195	200	189	219	256	299	274	244	234	243	243	2,768	1,226
Illinois	635	600	729	579	650	662	680	670	657	651	616	631	7,760	7,863
Indiana	64	68	64	67	70	70	70	68	67	65	65	70	808	829
Southwestern	54	55	50	54	57	56	56	54	54	53	56	59	658	649
Northeastern	10	13	14	13	13	14	14	14	13	12	9	11	150	180
Kansas	3,199	2,932	3,248	3,395	3,522	3,624	3,740	3,685	3,498	3,610	3,461	3,584	41,498	38,357
Kentucky	499	485	531	517	522	526	549	540	532	536	521	516	6,274	6,759
Louisiana	1,693	1,550	1,892	1,933	2,119	2,102	2,119	2,050	2,004	1,927	1,871	1,941	23,201	20,272
†Gulf Coast	332	310	370	356	320	328	414	409	364	296	316	325	4,140	3,227
Rest of State	1,361	1,240	1,522	1,577	1,799	1,774	1,705	1,641	1,640	1,631	1,555	1,616	19,061	17,045
Michigan	2	1	2	3	3	3	4	7	8	15	20	26	94	4
Montana	379	479	776	735	779	795	914	792	648	588	475	367	7,727	4,091
New Mexico	133	112	128	116	159	128	134	131	157	140	160	168	1,666	1,060
New York	147	141	158	165	156	162	174	167	171	176	158	181	1,956	1,695
Ohio	557	551	636	605	601	653	632	624	608	603	586	616	7,272	7,212
Central and East	410	406	471	447	438	472	463	464	452	449	449	471	5,392	5,272
Northwestern	147	145	165	158	163	181	169	160	156	154	137	145	1,880	1,940
Oklahoma	13,787	12,706	14,345	14,466	14,924	14,424	14,793	14,844	14,335	15,891	16,829	17,851	179,195	176,768
Osage County	2,019	1,893	2,069	1,968	2,019	2,109	2,190	2,315	2,169	2,284	2,107	2,214	25,356	28,220
Rest of State	11,768	10,813	12,276	12,498	12,905	12,315	12,603	12,529	12,166	13,607	14,722	15,637	153,839	148,548
Pennsylvania	654	650	726	748	748	777	784	783	772	802	760	757	8,961	8,097
Tennessee	3	4	3	5	4	4	3	2	5	3	4	3	43	24
Texas	10,655	9,703	10,589	10,743	11,559	11,745	13,840	16,036	16,670	18,303	18,269	18,800	166,916	144,648
†Gulf Coast	2,500	2,384	2,388	2,401	2,496	2,304	3,231	4,463	4,547	4,600	4,772	5,049	41,135	29,885
Rest of State	8,155	7,319	8,201	8,342	9,063	9,445	10,609	11,573	12,122	13,703	13,497	13,751	125,781	114,763
West Virginia	449	440	497	493	490	510	518	504	518	519	489	519	5,946	5,763
Wyoming	2,488	2,248	2,392	2,245	2,245	2,090	2,127	2,065	2,058	2,064	1,930	1,824	25,776	29,173
Salt Creek	1,825	1,650	1,709	1,612	1,583	1,494	1,415	1,450	1,352	1,390	1,293	1,237	18,010	21,445
Rest of State	663	598	683	633	662	596	712	615	706	674	637	587	7,766	7,728
‡Other	....	....	1	1	1	1	1	1	1	1	....	....	8	12
	59,981	54,892	60,880	60,371	62,822	61,789	65,168	67,009	65,782	69,664	69,891	72,625	770,874	763,743
Classification by gravity (approx.)														
Light	49,039	44,892	50,027	49,562	51,710	51,068	53,501	54,558	54,007	57,422	57,720	60,220	633,726	620,367
Heavy	10,942	10,000	10,853	10,809	11,112	10,721	11,667	12,451	11,775	12,242	12,171	12,405	137,148	143,376

*Annual and semiannual figures from California State Mining Bureau; monthly figures prorated. †Salt dome pools. ‡Alaska and Utah.

WELLLS DRILLED FOR OIL AND GAS IN UNITED STATES IN 1926*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Oil	1,168	1,133	1,307	1,463	1,515	1,697	1,856	1,858	1,745	1,962	1,749	1,569	19,013	16,559
Gas	192	175	194	190	173	185	208	209	178	194	231	212	2,341	2,330
Dry	603	499	623	573	695	665	879	737	656	698	694	643	7,965	6,734
Total	1,963	1,807	2,124	2,226	2,383	2,547	2,943	2,804	2,579	2,854	2,674	2,415	29,319	25,623

*For States east of California, from Oil and Gas Journal; for California, from the American Petroleum Institute.

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GOVERNMENT PETROLEUM STATISTICS FOR THE YEAR 1926

CRUDE PETROLEUM PRODUCED IN UNITED STATES IN 1926 BY FIELDS
(Thousands of barrels of 42 U. S. Gallons)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Appalachian	2,162	2,126	2,386	2,375	2,358	2,451	2,491	2,460	2,450	2,485	2,381	2,447	28,572	27,610
Lima-Indiana	157	158	179	171	176	195	183	174	169	166	146	156	2,030	2,120
Michigan	2	1	2	3	3	3	4	7	8	15	20	26	94	4
Illinois-S. W. Indiana	689	655	779	633	707	718	736	724	711	704	672	690	8,418	8,512
Mid-Continent	31,911	29,049	32,453	33,090	34,643	34,244	35,844	36,604	36,207	39,351	39,536	40,935	423,867	424,331
Gulf Coast	2,832	2,694	2,758	2,757	2,816	2,632	3,645	4,872	4,911	4,896	5,088	5,374	45,275	33,112
*Rocky Mountain	3,181	3,034	3,497	3,286	3,403	3,270	3,475	3,263	3,108	3,027	2,799	2,602	37,945	35,562
California	19,047	17,175	18,826	18,056	18,716	18,276	18,790	18,905	18,218	19,020	19,249	20,395	224,673	232,492
	59,981	54,892	60,880	60,371	62,822	61,789	65,168	67,009	65,782	69,664	69,891	72,625	770,874	763,743

*Includes Alaska.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM*
(Thousands of barrels)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Imports	4,688	3,743	7,216	5,906	4,501	5,571	5,185	5,332	4,350	3,860	5,043	4,987	60,382	61,824
From Mexico	3,496	2,883	5,362	4,405	3,344	4,215	3,399	3,360	2,265	2,500	2,916	2,253	40,398	55,049
From Venezuela	759	740	1,114	1,111	853	1,009	1,037	1,088	1,102	834	1,066	1,572	12,285	4,692
From Peru	370	120	440	390	304	278	306	235	267	119	....	215	3,044	1,825
From Colombia	....	....	....	....	....	....	367	549	653	230	905	917	3,621	....
From other countries	63	....	300	....	....	69	76	100	63	177	156	30	1,034	258
Exports	1,183	1,049	965	1,308	1,842	1,226	1,726	1,083	1,388	1,010	1,344	1,283	15,407	13,333
Domestic oil: To Canada	1,058	780	821	971	1,383	1,068	1,537	960	1,234	920	1,101	1,150	12,983	8,916
To other countries	125	269	143	337	459	158	189	123	154	90	243	133	2,423	4,209
Foreign oil	....	....	1	....	....	....	....	....	....	....	....	....	1	210
‡California crude oil	226	269	300	578	805	415	761	294	670	159	435	472	5,384	2,972

*Bureau of Foreign and Domestic Commerce. ‡Included in total exports of domestic crude.

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS
(Thousands of barrels of 42 U. S. gallons.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Domestic petroleum by fields of origin:														
Appalachian	2,129	2,121	2,484	2,160	2,433	2,388	2,515	2,675	2,785	2,759	2,564	2,330	29,343	28,397
Lima-Indiana	192	191	203	164	214	250	208	214	167	197	159	179	2,338	2,374
Michigan	2	1	2	3	3	3	4	7	8	15	20	26	94	4
Illinois and S. W. Indiana	666	261	313	331	440	904	859	1,005	715	522	573	652	7,241	8,811
Mid-Continent	35,293	31,487	34,914	37,429	39,044	38,448	37,318	38,824	37,344	39,507	37,569	40,536	447,713	439,742
Gulf Coast	3,652	3,627	3,001	3,757	2,740	2,395	4,208	3,574	3,954	3,731	5,539	4,206	44,484	34,004
*Rocky Mountain	2,978	2,702	3,080	3,026	3,004	3,251	3,483	3,441	3,548	3,685	3,426	3,085	38,709	35,310
Deliveries and exports	44,912	40,390	43,997	46,870	47,878	47,639	48,595	49,740	48,521	50,416	49,850	51,114	569,922	548,642
Deliveries	43,955	39,610	43,333	46,140	46,841	46,828	47,630	48,951	47,803	49,565	48,941	50,303	559,900	538,489
Foreign petroleum	3,656	3,651	7,332	5,952	4,500	5,635	5,121	5,173	4,342	3,788	4,991	5,038	60,179	61,941
Deliveries of domestic and foreign petroleum	48,611	43,261	50,665	52,092	51,341	52,463	52,751	54,124	52,145	53,353	53,932	55,341	620,079	600,430

*Includes Alaska.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (From the Panama Canal Record)
(In units of thousands.)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
Crude oil: Long tons (2,240 lbs.)	116	211	151	218	164	195	120	146	120	136	69	115	1,761	2,020
Barrels (approx.)	833	1,516	1,087	1,568	1,179	1,407	862	1,048	861	981	494	830	12,666	14,545
Refined products: Barrels (approx.)	1,685	846	1,814	1,309	1,811	1,657	1,495	2,143	2,397	1,651	1,695	2,184	20,687	14,032
Gasoline	897	333	750	452	832	692	643	812	917	523	869	755	8,475	10,280
Tops	162	....	....	166	....	....	....	....	119	....	....	....	447	1,577
Gas oil	230	304	338	478	696	355	394	614	385	545	372	597	5,308	828
Fuel oil	326	141	726	145	283	542	458	717	908	514	386	832	5,978	821
Lubricants	70	68	....	68	....	68	....	....	68	69	68	....	479	526

WORLD'S PRODUCTION OF PETROLEUM IN 1926, COMPARED WITH 1925*

	1926				1925			
Country—	Barrels (42 U. S. gallons)	Metric tons	Cubic meters	Percentage of total by volume	Barrels (42 U. S. gallons)	Metric tons	Cubic meters	Percentage of total by volume
United States	770,874,000	106,474,000	122,555,000	70.3	763,743,000	104,622,000	121,422,000	71.5
Mexico	90,421,000	13,766,000	14,375,000	8.3	115,515,000	17,626,000	18,365,000	10.8
†Russia	62,941,000	8,899,000	10,007,000	5.7	52,448,000	7,295,000	8,388,000	4.9
Venezuela	37,381,000	5,476,000	5,943,000	3.4	19,687,000	2,884,000	3,130,000	1.8
Persia	35,842,000	4,759,000	5,698,000	3.3	35,038,000	4,652,000	5,571,000	3.3
Rumania	23,292,000	3,241,000	3,703,000	2.1	16,650,000	2,317,000	2,647,000	1.6
Netherlands East Indies	20,817,000	2,963,000	3,309,000	1.9	21,422,000	3,066,000	3,406,000	2.0
Peru	10,782,000	1,424,000	1,714,000	1.0	9,252,000	1,220,000	1,471,000	.9
India (British)	8,270,000	1,161,000	1,315,000	.8	8,274,000	1,162,000	1,315,000	.8
Argentina	7,947,000	1,159,000	1,263,000	.7	6,336,000	924,000	1,007,000	.6
Colombia	6,444,000	920,000	1,024,000	.6	1,007,000	144,000	160,000	.1
Poland	5,844,000	796,000	929,000	.5	5,960,000	812,000	948,000	.5
Trinidad	5,278,000	737,000	839,000	.5	4,387,000	610,000	697,000	.4
British Borneo (Sarawak)	4,942,000	712,000	786,000	.5	4,257,000	613,000	678,000	.4
Japan and Taiwan	1,557,000	216,000	248,000	.1	1,694,000	235,000	269,000	.1
Egypt	1,181,000	172,000	188,000	.1	1,226,000	179,000	195,000	.1
Germany	635,000	95,000	104,000		541,000	79,000	86,000	
France	478,000	68,000	76,000		459,000	66,000	73,000	
Canada	365,000	46,000	58,000		332,000	42,000	53,000	
Ecuador	214,000	30,000	34,000		160,000	23,000	25,000	
Sakhalin (Russian)	181,000	28,000	29,000		87,000	14,000	14,000	
Czechoslovakia	150,000	22,000	24,000	.2	158,000	23,000	25,000	.2
Italy	45,000	5,000	7,000		70,000	8,000	11,000	
Algeria	9,000				12,000			
Barbados	9,000				9,000			
Cuba	4,000	5,000	6,000		4,000	6,000	6,000	
England	3,000				3,000			
‡Other countries	10,000				10,000			
	1,095,934,000	153,174,000	174,234,000	100.0	1,068,741,000	148,622,000	169,962,000	100.0

*Compiled by L. M. Jones of the Bureau of Mines. †Exclusive of Sakhalin, which is shown separately. ‡Estimated.

COMPARATIVE ANALYSES, 1926, INCORPORATING ALL REVISIONS TO THE PRELIMINARY SUMMARY OF FEBRUARY 23
(Units in thousands of barrels, except for wax)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1926	1925
*CRUDE RUN TO STILLS	61,103	56,347	62,743	61,531	65,354	64,810	67,335	67,589	66,420	68,907	67,641	69,484	779,264	739,920
GASOLINE:														
Production	23,208	21,259	23,868	24,296	25,271	24,946	25,504	25,942	25,360	26,337	26,245	27,498	299,734	259,601
†Imports	299	337	444	419	586	434	427	614	228	844	456	452	5,540	3,813
†Exports	3,361	3,246	3,094	4,256	4,530	3,744	3,702	3,568	3,782	2,783	3,834	3,413	43,313	31,497
Stocks	41,524	44,132	46,121	45,767	42,916	40,779	38,289	34,421	33,267	33,712	35,906	39,023	39,923	38,875
Days' supply	62	65	64	55	46	44	42	35	37	39	46	49	47	56
Domestic demand	17,497	15,742	19,229	20,813	24,178	23,773	24,719	26,856	22,970	23,943	20,674	21,419	261,813	223,865
KEROSENE:														
Production	5,122	4,746	5,516	5,037	5,210	5,009	4,877	5,162	5,207	5,126	5,357	5,399	61,768	59,689
†Imports	....	1	1	....	4	3	21	20	21	3	....	....	74	19
†Exports	1,871	1,577	1,876	1,759	1,623	1,601	1,613	2,691	1,856	1,905	2,029	1,847	22,248	21,212
Stocks	6,851	6,855	7,004	7,014	7,378	7,881	8,434	8,196	8,162	8,238	8,060	8,575	8,575	7,121
Domestic demand	3,521	3,166	3,492	3,268	3,227	2,908	2,732	2,729	3,406	3,148	3,506	3,037	38,140	39,969
GAS AND FUEL OILS:														
Production	28,981	27,094	29,824	28,029	30,380	29,130	31,461	31,154	30,698	32,444	31,624	33,376	365,195	364,991
†Imports	863	1,585	947	1,148	1,368	1,856	1,485	1,629	818	858	1,111	764	14,432	12,245
†Exports	3,612	3,190	2,345	3,476	2,735	3,370	2,427	3,582	2,750	2,015	5,019	3,830	38,351	36,088
‡Stocks	23,266	21,445	20,037	19,788	20,858	22,554	25,696	26,500	27,151	26,376	26,859	24,898	24,898	24,681
LUBRICANTS:														
Production	2,648	2,448	2,646	2,692	2,863	2,681	2,831	2,648	2,645	2,768	2,724	2,689	32,293	31,055
†Imports	2	1	4	3	11	3	1	2	2	2	1	1	33	37
‡Exports	727	789	740	928	717	984	746	660	701	705	821	917	9,435	9,678
Stocks	7,544	7,910	7,640	7,368	7,656	7,314	7,328	7,226	7,148	7,437	7,620	7,576	7,576	7,253
Domestic demand	1,632	1,294	2,180	2,039	1,869	2,042	2,072	2,092	2,023	1,777	1,721	1,827	22,568	20,581
Wax:														
Production	53,015	50,307	55,714	55,371	56,135	50,673	54,267	54,441	49,228	56,011	54,975	55,975	645,815	590,577
†Imports	631	668	456	647	213	812	2,089	968	252	1,384	674	1,189	9,983	14,588
†Exports	29,061	28,709	25,005	31,560	23,968	27,299	30,768	27,370	29,303	28,744	25,387	28,410	335,584	334,179
Stocks	122,773	123,964	130,341	136,084	149,396	155,254	156,704	165,065	159,779	167,925	177,054	185,331	185,331	116,391
Domestic demand	18,203	21,075	24,788	18,715	19,068	18,328	24,138	19,678	25,463	20,505	20,436	20,477	251,274	244,301

*California figures revised to exclude natural-gas gasoline run through pipe lines.
†From Bureau of Foreign and Domestic Commerce, subject to revision; exports, except for wax, include shipments to Alaska, Hawaii, and Porto Rico.
‡East of California.

GOVERNMENT PETROLEUM STATISTICS FOR THE YEAR 1926

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES

(Thousands of barrels of 42 U. S. gallons.)

EAST OF CALIFORNIA:	Jan. 31, 1926	Feb. 28	Mar. 31	Apr. 30	May 31	June 30	July 31	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31, 1926	Dec. 31, 1925
At refineries: By location of storage:													
East Coas.:													
Domestic	8,003	6,397	6,602	6,664	7,267	8,544	8,582	8,754	9,145	9,465	7,913	7,240	6,844
Foreign	2,754	2,473	3,113	3,242	2,919	2,681	3,092	3,078	2,648	2,220	2,354	2,186	2,650
Appalachian	1,546	1,579	1,616	1,624	1,653	1,688	1,722	1,659	1,688	1,675	1,664	1,673	1,507
Indiana, Illinois, etc.	1,492	1,482	1,571	1,727	1,749	1,919	1,881	1,844	1,992	2,034	2,058	2,224	1,318
Oklahoma, Kansas, etc.	3,594	3,607	3,558	4,072	3,825	3,713	3,081	2,889	2,312	2,287	2,548	2,926	3,422
Texas: Inland	1,155	1,114	740	1,025	1,227	1,147	1,133	1,010	942	863	952	952	944
Gulf Coast: Domestic	5,533	6,176	5,975	6,842	6,501	6,736	6,627	7,029	7,571	7,536	7,903	8,194	5,616
Foreign	286	144	266	369	244	407	416	371	306	281	206	236	341
Arkansas and Inland Louisiana	470	546	690	631	762	649	572	715	676	710	638	601	656
Louisiana, Gulf Coast: Domestic	2,883	3,953	4,217	5,102	6,291	6,256	6,664	7,060	8,241	7,519	7,067	7,019	3,242
Foreign	1,556	1,531	1,871	1,732	1,807	1,464	1,089	1,111	909	766	761	802	1,197
Rocky Mountain	1,509	1,521	1,498	1,571	1,562	1,538	1,500	1,462	1,394	1,487	1,501	1,422	1,463
Total	30,781	30,523	31,717	34,401	35,867	36,742	36,358	36,982	37,824	36,843	35,565	35,475	29,266
Pipe line and tank farm stocks (ne):													
Domestic. By field of origin:													
N. Y., Pa., W. Va., E. & Cent. Ohio	6,712	6,753	6,657	6,893	6,823	6,930	6,984	6,962	6,841	6,680	6,577	6,570	6,745
Kentucky	1,820	1,790	1,784	1,778	1,779	1,740	1,668	1,481	1,272	1,165	1,090	1,220	1,748
Lima-Indiana	937	905	882	889	851	796	771	731	733	702	689	666	971
Illinois-S. W. Indiana	10,606	11,001	11,468	11,771	12,039	11,854	11,731	11,451	11,448	11,631	11,731	11,770	10,582
Okla., Kans., Cent., N. & W. Tex.	149,258	147,175	144,932	141,381	137,932	135,279	135,445	135,089	136,197	137,350	140,925	142,208	153,012
Northern La., and Arkansas	43,449	43,227	43,157	42,514	x1,711	40,305	38,815	37,100	35,000	33,839	32,376	31,640	42,929
Gulf Coast	18,441	17,506	17,261	16,259	16,333	16,568	16,003	17,300	18,255	19,418	18,965	20,031	19,263
Rocky Mountain	29,185	29,505	29,909	30,156	30,542	30,548	30,527	30,335	29,882	29,211	28,571	28,075	28,995
Total	260,408	257,862	256,060	251,641	248,010	244,020	241,944	240,449	239,628	239,996	240,924	242,180	264,245
Foreign: Atlantic Coast	97	124	102	56	42	58	70	75	65	72	105	165	104
Gulf Coast	342	407	312	312	327	247	299	453	471	536	555	444	302
Total	439	531	414	368	369	305	369	528	536	608	660	609	407
Producers' stocks*	7,419	7,292	7,151	7,015	6,874	6,738	6,597	6,456	6,320	6,180	6,044	5,904	7,566
Total stocks east of California	299,047	296,208	295,342	293,425	291,060	287,805	285,269	284,415	284,308	283,627	283,193	284,168	301,412
CLASSIFICATION BY GRAVITY (approx.):													
East of California:†													
Light crude (24 degrees and above)		230,730	228,161	226,737	224,669	221,665	221,535	220,240	220,103	222,137	223,828	225,404	
Heavy crude (below 24 degrees)	291,628	58,186	60,030	59,873	59,517	59,402	57,137	57,719	57,885	55,310	53,321	52,860	293,852
California: Light	44,197	44,871	43,973	‡38,634	37,192	35,454	33,548	32,149	30,494	30,390	30,051	30,861	44,451
Heavy (including fuel oil)	86,614	86,744	88,466	‡85,656	88,184	87,364	88,092	87,772	87,353	87,529	87,440	87,270	85,783

*Figures for December 31, 1925 and 1926, as reported by producing companies; other months prorated. †Exclusive of producers stocks. ‡8,215,000 bbls. lost by fire.

VALUE OF CRUDE PETROLEUM AT WELLS, 1925-1926, AND NUMBER OF PRODUCING OIL WELLS IN UNITED STATES, DECEMBER 31, 1925 AND 1926

	Value at the Wells				Producing Oil Wells in U. S. Dec. 31, 1925, 1926			
	1925		1926		1925		1926	
	Total	Average per barrel	Total	Average per barrel	No. of wells	Av. per well per day (barrels)	No. of wells	Av. per well per day (barrels)
Alaska	$34,000	$4.25	x				x	
Arkansas	*8,880,000	.89	$64,600,000	$1.11	4,100	49.5	4,500	29.6
California	z330,610,000	1.42	z345,547,000	1.54	†11,070	56.6	11,330	58.1
Colorado	1,890,000	1.48	5,100,000	1.84	80	64.1	130	60.3
Illinois	15,235,000	1.94	17,200,000	2.22	16,280	1.3	16,270	1.3
Indiana:								
Southwestern	1,245,000	1.92	1,460,000	2.22	990	1.7	990	1.9
Northeastern	370,000	2.06	310,000	2.07	1,010	.4	1,060	.3
Total Indiana	1,615,000	1.95	1,770,000	2.19	2,000	1.0	2,050	1.1
Kansas	74,410,000	1.94	93,800,000	2.26	18,600	5.6	19,230	6.0
Kentucky	15,682,000	2.32	15,250,000	2.43	13,100	1.3	13,300	1.3
Louisiana:								
Gulf oCast	5,080,000	1.57	5,750,000	1.39	280	43.2	240	43.7
Rest of State	27,420,000	1.61	32,450,000	1.70	3,490	12.3	3,950	13.2
Total Louisiana	32,500,000	1.60	38,200,000	1.65	3,750	14.4	4,190	14.9
Michigan	10,000	2.50	253,000	2.69	x	....	90	9.3
Montana	6,420,000	1.57	10,170,000	1.32	590	21.1	830	14.3
New Mexico	1,815,000	1.71	3,270,000	1.96	140	31.8	230	23.6
New York	6,270,000	3.70	7,200,000	3.68	15,580	.3	16,150	.4
Ohio:								
Central and Eastern	14,070,000	2.67	14,780,000	2.74	21,120	.7	21,150	.7
Northwestern	4,210,000	2.17	4,400,000	2.34	17,940	.3	18,100	.3
Total Ohio	18,280,000	2.53	19,180,000	2.64	39,060	.5	39,250	.5
Oklahoma	348,230,000	1.97	413,900,000	2.31	59,400	7.7	61,600	9.3
Pennsylvania	29,310,000	3.62	31,930,000	3.56	75,900	.3	76,800	.3
Tennessee	53,000	2.21	100,000	2.33	x	....	x	....
Texas.								
Gulf Coast	48,280,000	1.62	61,850,000	1.50	2,430	30.8	2,520	64.6
Rest of State	213,990,000	1.86	246,850,000	1.96	20,970	12.8	26,510	16.7
Total Texas	262,270,000	1.81	308,700,000	1.85	23,400	14.7	29,030	20.9
Utah	4,000	1.00	x	....	x	..	x	..
West Virginia	20,055,000	3.48	20,560,000	3.46	19,940	.8	20,150	.8
Wyoming	51,467,000	1.76	51,020,000	1.98	3,080	24.8	3,400	17.3
Others	....	....	‡10,000	1.25	§30	..	§70	..
Total	1,284,960,000	1.68	1,447,760,000	1.88	306,100	6.5	318,600	7.4

xIncluded in "Other." zCalifornia State Mining Bureau. †From American Petroleum Institute. ‡Alaska and Utah. §Alaska, Michigan and Tennessee. ‖Alaska, Tennessee, Utah.

EASTERN FIELDS

(Continued from Page 60)

& Co. are rigging up on the John Freshwater farm. In Central district, Doddridge County, the Parkersburg Oil & Gas Co. is due in the sand at No. 2 on the Leroy Ingram farm.

The Ohio Fuel Oil Co. is drilling a test on the C. H. Bland farm, in Birch district, Braxton County. In Lee district, Calhound County, the same company is due in the sand on the James L. Stump farm. In Dekalb district, Gilmer County, McCall & Co. have started to drill on the R. E. Davis farm. In Lee district, Calhoun County, Godfrey L. Cabot has the road completed to a location on the Leona M. Nicholson farm. In Sherman district, McIntosh & Miller have started to drill on the S. B. Moore farm. In Center district, Gilmer County, the Carnegie Natural Gas Co. is building a rig on the Loyd Westfall farm.

In Section 16, Warren Township, Belmont County, O. A. Jones and others are drilling a deep test on the O. A. Jones farm. Martin Yester is drilling a second test on the Amos Keyes farm. In Section 26, Wayne Township, Monroe County, the Sylvania Producing Co. is drilling on the E. F. Givens farm. In Section 22, Washington district, Crew, Levick & Co. are drilling on the G. W. Allen farm. In Section 24, Jefferson Township, Noble County, Joseph Saling and others are drilling on the Alice Feldner farm. In Section 32, Stock Township, Addison Blake & Co. are drilling on the John Kerwin farm.

Tests in Old Territory

In Otter district, Braxton County, Pauley & Co. are drilling at 1,500 feet at a test on the Henry Clowser farm. In Carroll district, Lincoln County, L. R. Sweetland has started to drill on the John and L. R. Sweetland farm. In McElroy district, Tyler County, Baker & Co. have drilled a test on the J. E. Blair farm to a depth of 1,930 feet and shut down. On the headwarters of Wolf Run, Union district, Pleasants County, L. C. White has started to drill on the James Dennis farm.

Southeast Ohio

The Southeast Ohio Fields reported but two late completions. In Section 3, Hanover Township, Licking County, E. J. Edmond and others completed in the Berea grit a test on the John C. Williams farm. It produced 17 bbls. the first 24 hours after shot.

In Salem Township, Washington County, Section 17, J. C. Carnner & Co. completed, in the Maxon sand, a second test on the William Holland farm. It is good for 3 bbls. a day and has considerable gas.

The Atha Oil Co. drilled a test on the Anna Henderson farm, located in the SE of Section 20, Madison Township, Perry County, through the Clinton sand. It is a duster. In Lot 19, Monroe Township, Holmes County, the Empire Gas & Fuel Co. completed in the same formation a test on the F. A. Kinsey farm. It is a very light gasser.

In Section 4, Green Township, Hocking County, the Roan Oil & Gas Co. is due in the Clinton sand at a test on the J. M. Roan farm. In Section 28, Coal Township, Perry County, the Big Ten Oil & Gas Co. is drilling in the sand at No. 5 on the Hazleton heirs' farm. In the same section and township, the Chartiers Oil Co. is due in the sand at No. 205 on the Hocking Valley Products Co.'s property.

In Harrison Township, Perry County, Section 21, David L. Melick, trustee, is drilling a test on the George Wilson farm. In Section 28, same township, the Glendale Oil & Gas Co. has a rig up on the J. & M. Starcher farm. In Section 16, W. W. and A. T. Wehrle have the rig completed for a test on the Mrs. Lucy Teal farm. In the same township, the Pure Oil Co. has rigs up for Nos. 2 and 3 on the A. P. Tague heirs' farm.

In the SW. Section 33, Falls Gore Township, Hocking County, Rice and others have completed a test on the J. L. Bowlby 55 acres and it is a gasser in the Berea grit good for 200,000 feet.

In the SW, Section 24, Green Township, Hocking County, the Logan Natural Gas Co. has drilled a second test on the Almade Linton farm through the Berea grit. Nothing was found but a very light showing of oil.

In the SW. Section 20, Elk Township, Noble County, J. T. Lovett & Co.'s No. 21, on the Louisa Lovett farm, is good for 4 bbls. a day in the Buell Run sand. In the Fisher Pool, Section 30, Alexander Township, Athens County, the Townsend Oil & Gas Co.'s No. 6, on Sarah E. Penrod farm, is good for not more than 3 bbls. a day in the Berea grit. In Reading Township, Section 18, Perry County, Dean Egart and others have a duster in the Clinton sand at a test on the George Edman farm. In Section 11, Rush Creek Township, Fairfield County, the Kittle Oil & Gas Co. had the same luck at a test on the F. M. Kittle farm. In the same township, R. P. Hass and others started to drill a test on the James G. and J. C. King farm.

Southwest Pennsylvania

In Wayne Township, Greene County, the Manufacturers Light & Heat Co. has a gasser in the Bayard sand at a test on the Layton Stewart farm. In Morris Township, the Carnegie Natural Gas Co. has a Gordon sand gasser at a test on

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B
C
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NOTE FULL REAM WELL ROUNDED
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2½ in. - 6½ lb. Reading A. P. I. External Upset Tubing.

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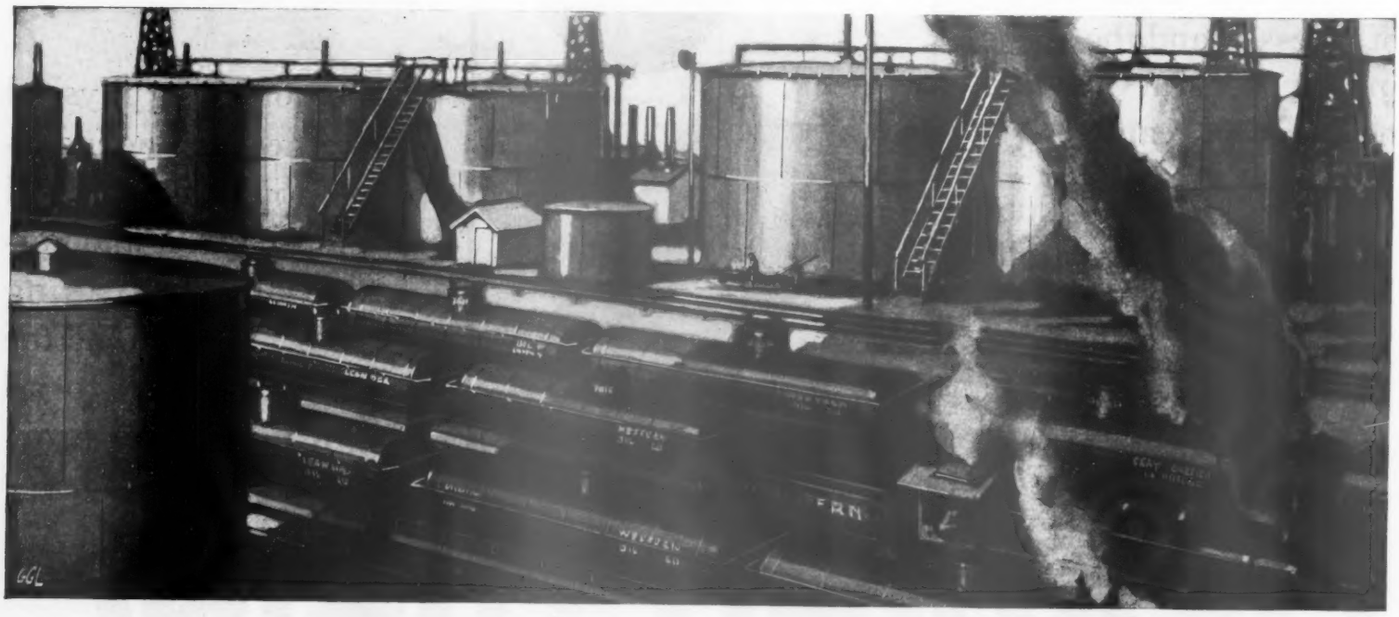

ARCO
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the D. K. Phillips farm. In Springhill Township, the Renner Oil & Gas Co.'s test, on the Manuel Renner farm, an old well drilled down, is a gasser in the Big Injun sand.

In Perry Township, Greene County, the Carnegie Natural Gas Co. has a gasser in the Big Injun sand at No. 3 on the S. A. Lemley farm.

MEXICAN FIELDS

(Continued from Page 53)

when finished. In the south fields, same period, there was completed 33 wells, of which 15 were rated commercial producers. Such new production is of no moment at this writing, as wells drilling into the pay in these days show quite an aptitude for falling off, or quitting entirely—with a few rare exceptions. In the first six months of 1926 there was drilled to completion, in the fields under discussion, 98 more wells than were finished in the first half of the current year.

In the Isthmus of Tehuantepec, Mexican Eagle Oil Co. finished 15 wells, in the period under discussion, of which 13 were producers and 2 were failures. This was an excellent showing for this part of the country, and over 8,000 bbls. of new production was thus obtained.

The few other wildcat operations in the Republic have thus far resulted in nothing. It might be further remarked that but little interest is being displayed in distinctive wildcat operations at this time. There are a few tests along the Rio Grande (state of Tamaulipas); two in Coahuila, and two or three strings are presumably operating in south Mexico, other than the Isthmus of Tehuantepec, which is a proven field. In juxtaposition to the Tampico district there is only one wildcat test drilling at this time, the location being just west of Columbus station, in the state of Tamaulipas.

In sum, the actual wildcat operations in Mexico at this writing are of little moment.

OKLAHOMA FIELDS

(Continued from Page 44)

Bowlegs	7	4,119
Davis	3	2,103
Fay	1	1,614
Goforth	9	3,868
Livingston	12	11,604
Lizzie	1	586
Walker	8	4,090
Wilmont	4	3,315
Work	1	979
Youngblood	4	1,027
McCulloch—Bowlegs	2	510
Mid-Continent—Baker	4	5,362
Hutke	1	20
Minnehoma—Bowlegs	4	2,833
Prairie—Gahagan	3	2,735
Harber	7	5,415
N. Templeton	1	3,210
Whitney	4	1,035
Pure—Reed	14	11,803
Strothers "D"	1	1,358
Strothers "E"	1	15
Strothers "F"	1	650
Roxana and Houston—Taylor	5	3,387
Shaffer—Lacy	3	1,153
Sinclair—Adam	1	5
Bowlegs	1	....
Cumsey	2	646
Ellen	3	1,880
Harjo	3	2,905
Jones	4	8,455
Taylor	3	4,599
Walker	4	3,010
Texas—Reed	7	7,085
Tidal—Harjoche	4	2,655
Twin State—Jones	1	2,155
Total	211	160,232

Earlsboro

Company and Farm—	Wells	Prod.
Amerada—Anderson	4	3,665
Cowden	4	3,910
Rodgers	1	4,665
Barnsdall—Brown	1	3,536
Bruner, P.	1	34
Cudjo, C.	1	31
Davis, D.	2	2,984
Davis, J.	2	248
Davis, M.	3	2,403
Gibson	6	10,783
Hearn	1	19
Hooley	1	12
Ingram	1	408
Pack	3	2,937
Peter	3	743
Sango	1	113
Sebolka	1	2,796
Sullivan, H.	2	2,330
Sullivan-Harjo	2	74
Smith	1	8
Wasutke	2	2,269
Carter—Payne	1	880
Sango	1	180
Continental—Spencer	1	6,085
Crosbie—Bryant	3	1,722
Empire—Edmundson	2	3,596
Gypsy—Bora	1	....
Bruner	2	6,262
Carter	3	360
Earl	1	....
McFarland	2	75
Noble	1	2,042
Peter	4	1,883
State	4	1,085
Strain	1	....
Independent—Bruner	1	40
Sullivan	2	170
Knapp	4	1,195
Gaines	1	2,835
O'Dell	4	10,135
Inter-Ocean—Payne	1	....
Magnolia—Bryant	4	1,771
Edmundson	2	2,885
Holmsley	6	8,762
Ingram	1	35
Lena	2	57
Seay	4	2,687
Simpson	3	16
Sparks	6	5,348
Mid-Continent—McCumber	4	3,840
Mid-Kansas—Anderson	1	60
Phillips—Dunnaway	1	26
Graham	6	2,072
Philmack—Dobbs	2	....
Prairie—Baker	1	50
Davis	3	2,900
Graham, C.	1	4,615
Graham, O.	4	11,305
Stidham	7	6,775
Stidham	7	6,755
Roxana—Bayliss	1	....
Hearn	1	....
Spencer	2	4,123
Sinclair—Foreman	1	....
Hollins	1	2,640
Skelly—Spencer	1	9,970
Texas—Brown	2	70
Rodgers	1	7,388
Wilmont	1	235
Tidal—Watkins	4	5,105
Twin State—Barker	1	3,140
Hearn	1	2,910
Total	157	171,312

Seminole

Company and Farm—	Wells	Prod.
Carter—B. Carter	2	250
J. Carter	3	35
F. Carter	3	210
Creamer	2	10
R. Cudjo	4	880
W. Cudjo	2	165
Gilliland	2	325
Grisso, M.	1	20
Grisso, W.	6	1,010
Knapp	3	1,280
Killing, M.	12	12,100
Killing, G.	4	1,490
Lukes	7	1,850
Ponder	1	60
Simpson	2	220
Strother	3	980
Vierson	4	295
Amerada—Fixico	4	1,199
Killing	4	377
Rentie	3	1,115
Atlantic—Cudjo, N.	4	690
Barnsdall—Carter	9	4,239
Henry	2	624
Jones	4	1,240
Empire—Gross	2	1,122
Wilson	3	424
Gypsy—Butler	3	715
Carter	8	1,835
Cudjo	4	1,257
Fixico	5	256
Harjo	3	1,268
Wolf	7	35
Independent—P. Fixico	4	185
Harjo	2	650
Independ. & Garland—T. Fixico	8	440
Indep. and Inter-Ocean—Jones	4	690
Ind. Terr—Allen	1	49
Bowlegs	11	3,336
Gooden	4	265
Harjo	4	500
James	4	1,013
Reed	3	36
Kingwood—Johnson	3	1,490
Magnolia—Cheparney	1	143
Franks	4	880
Mid-Continent—Rentie	9	1,605
Tayeche	7	415
Mid-Kansas—Jacksey	1	49
Pressley	1	30
Wilkins	1	519
Phillips—Strothers	3	270
Philmack—Butler	3	2,760
Prairie—Gross	5	50
Mason	1	753
Spencer	1	20
Strother	8	731
Pure—Strother, A.	17	4,146
Strother, B.	..	4,014
Strother, C.	1	....
Roxana—Harber	2	326
Lashley	2	94
Sinclair—Carter	2	35
Cudjo, A.	6	1,225
Cudjo, B.	3	585
Dicey	2	880
Fixico	4	935
Slick—Cudjo	3	795
Franks	8	1,731
Giblet, Ida	..	4,101
Tiger	1	121
Superior—Cudjo	4	785
Texas—Mayhue	1	165
Strothers	2	55
Tidal—Carter	5	1,075
Fixico	8	254
Harjo, D.	1	1,120
Harjo, T.	6	245
Mahardy	2	400
Tayeche	2	....
Turman—Cudjo	4	978
Grisso	1	268
Jones	4	1,365
Total	319	80,147

Searight

Company and Farm—	Wells	Prod.
Carter—Davis	5	5,370
Frazier	5	5,165
Kiker	1	35
Scott	1	40
Gypsy—Cudjo	2	819
Mid-Continent—Grayson	6	1,296
Soloche	2	1,400
Prairie—Cannon	1	15
Carter	1	5
Houck	1	7
Kincaid	8	1,305
Wiemer	1	25
Pure—Aldridge	3	4,746
Roxana—Strother	2	2,516
Sinclair—Polly	2	2,005
Twin State—Varnum	1	1,008

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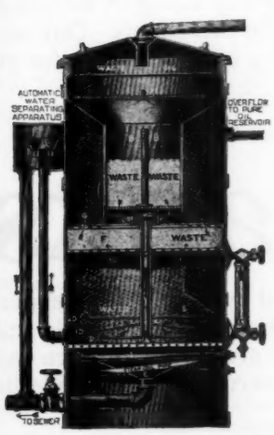

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Wilcox—Chupco	4	4,510
Total	46	30,261
Total Bowlegs	211	160,232
Total Little River	5	17,657
Total Earlsboro	157	171,312
Total Seminole	319	80,147
Total Searight	46	30,261
Grand total	738	459,609

Stephens County

Amerada Petroleum Corp.'s No. 1 Harrison, NE cor. SE SW, Section 12-1s-4w, was shut in for 7,000,000 feet of gas from sands 2,073 feet to 2,509 feet.

Wagoner County

H. W. Lampton's No. 1 Rulison, SE cor. NE SW, Section 9-15-16, is dry at 2,100 feet.

A. A. Williams has the machine on the ground for No. 1 Bruner, SW cor., Section 6-18-18.

FLUSH PRODUCTION IN AUGUST SHOWS LOSS

(Continued from Page 42)

KANSAS FIELDS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	12	735	5	..
Chautauqua and Elk	6	75	3	1
Cowley	5	.....	5	..
Greenwood	12	1,760	4	..
Miscellaneous	20	565	15	3
Total August	55	3,135	32	4
Total July	163	3,612	91	6
Difference	108	477	59	2

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	8	17	25
Cowley	5	29	34
Elk	..	9	9
Greenwood	11	26	37
McPherson	4	5	9
Marion	1	7	8
Sumner	13	29	42
Miscellaneous	10	72	82
Total August	52	194	246
Total July	50	195	242
Difference	2	1	4

LOUISIANA
Summary of Field Operations

Parish	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Tot.
Bienville	1	0	1	0	0	1	1
Bossier	1	*20	0	0	7	10	17
Caddo	24	*6,214	11	4	11	42	53
Claiborne	0	0	0	0	0	1	1
DeSoto	1	18	0	0	3	6	8
Grant	1	200	0	0	0	1	1
LeSalle	9	269	3	0	0	4	4
Monroe Dist.	0		1	3	5	11	16
Red River	2	0	1	1	1	1	2
Richland	5	0	3	2	0	9	9
Sabine	4	37	2	1	4	9	13
Webster	2	0	0	2	6	5	11
Winn	3	0	3	0	1	1	2
Misc.	2	0	2	0	4	3	7
Total August	59	6,758	27	13	42	103	145
Total July	47	10,189	15	10	55	99	154
Difference	12	3,431	12	3	13	4	9

*Four wells in Caddo Parish and one in Bossier Parish also producing gas.
†27,500,000 feet of gas.

ARKANSAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Union	15	839	7	1	9	17	26
Ouachita	5	126	1	2	2	11	13
Columbia	0	0	0	0	0	1	1
Nevada	9	860	2	1	0	6	6
Misc.	2	0	2	0	3	2	5
Total August	31	1,825	12	4	14	37	51
Total July	20	1,315	6	1	15	47	62
Difference	11	510	6	3	1	10	11

GULF COAST FIELDS
Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Boling	0	0	0	0	0	5	5
Batson	2	25	1	0	0	7	7
Blue Ridge	1	0	1	0	0	7	7
Big Creek	2	620	0	0	0	0	0
Barber Hill	0	0	0	0	0	2	2
Dayton	0	0	0	0	0	1	1
Edgerly, La.	0	0	0	0	1	6	7
Goose Creek	2	2,200	0	0	0	8	8
Humble	0	0	0	0	0	3	3
Hull	7	565	4	0	0	9	9
High Island	1	30	0	0	0	0	0
Jennings, La.	0	0	0	0	0	2	2
Lockport, La.	3	2,025	0	0	0	8	8
Markham	0	0	0	0	0	2	2
Nash	0	0	0	0	0	3	3
Orange	3	500	1	0	0	6	6
Orchard	0	0	0	0	0	1	1
Pierce Jct.	4	6,500	0	0	0	7	7
Spindletop	10	10,305	3	0	0	15	15
Saratoga	0	0	0	0	0	1	1
Sour Lake	2	70	0	0	0	1	1
So. Dayton	0	0	0	0	0	1	1
Vinton	2	70	1	0	0	1	1
W. Columbia	1	0	1	0	0	4	5
Miscellaneous	10	225	6	0	0	1	1
Total Aug.	50	23,135	18	0	7	127	134
Total July	79	30,190	35	0	26	152	178
Difference	29	7,055	17	0	19	25	44

EAST CENTRAL TEXAS
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Anderson	2		2	0	0	2	2
Cherokee	2		2	0	1	2	3
Freestone	2		2	0	0	1	1
Henderson	0		0	0	0	1	1
Limestone	1		1	0	0	5	5
Navarro	1		1	0	0	1	1
Smith	0		0	0	0	1	1
Total August	8		8	0	1	13	14
Total July	6	200	4	1	0	13	13
Difference	2	200	4	1	1	0	1

SOUTHWEST TEXAS FIELDS
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rig	Drlg	Tot.
Mirando	26	255	14	7	7	27	34
Rockdale-Minerva	6	52	2	0	1	5	6
Luling	2	70	0	0	1	2	3
Kingsville	6	125	4	1	1	4	5
Refugio	0	...	0	0	0	9	9
Adams Field	3	...	1	2	2	2	4
Somerset	3	18	0	0	1	0	1
Misc.	10	18	0	0	10	70	80
Total Aug.	56	539	21	10	23	119	142
Total July	58	418	24	8	23	130	153
Difference	2	121	3	2	0	11	11

TEXAS PANHANDLE
Summary of Completed Wells

County—	Comp.	Prod.	Dry	Gas
Briscoe	1	0	1	0
Carson	4	1,470	0	0
Castro	1	0	1	0
Collingsworth	1	0	1	0
Deaf Smith	2	0	2	0
Dickens	1	0	1	0
Gray	12	3,774	2	1
Hockley	1	0	1	0
Hutchinson	16	1,421	0	5
King	1	0	1	0
Moore	2	0	0	2
Motley	1	0	1	0
Roberts	1	0	1	0
Wheeler	3	0	1	2
Total, August	47	6,665	13	10
Total, July	75	11,939	7	7
Difference	28	5,274	6	3

TEXAS PANHANDLE
Summary of Rigs and Wells Drilling

County—	Rigs	Drg.	S.D.	Ttl.
Carson	5	2	9	16
Gray	8	8	25	51
Hutchinson	40	5	31	76
Wheeler	8	2	6	17
Miscellaneous counties	37	4	22	63
Total, August	98	22	103	223
Total, July	39	118	93	250
Difference	59	96	10	27

NORTH CENTRAL AND WEST TEXAS
Summary of Completed Wells
West Texas

County—	Comp.	Prod.	Dry	Gas
Borden	1	0	1	0
Crane	28	44,382	1	0
Crocket	1	45	0	0
Fisher	1	0	1	0
Glasscock	1	0	1	0
Howard	4	77	1	0
Jones	1	0	1	0
Mitchell	3	284	1	0
Nolan	1	0	1	0
Pecos	4	9,122	1	0
Reeves	2	0	2	0
Reagan	8	2,203	0	0
Scurry	1	43	0	0
Tom Green	1	0	1	0
Taylor	2	0	2	0
Upton	10	2,715	8	0
Winkler	2	1,065	1	0
Total West Texas	71	59,936	18	0

North Central Texas

Archer	23	623	15	0
Brown	45	7,467	17	1
Coleman	6	0	3	3
Clay	2	0	2	0
Callahan	17	1,497	10	0
Comanche	1	0	1	0
Cooke	27	2,578	6	3
Denton	2	0	2	0
Eastland	23	4,114	10	3
Jack	12	402	5	0
Knox	1	0	1	0
Montague	10	125	3	1
Palo Pinto	1	0	1	0
Shackelford	12	72	8	1
Stephens	3	0	3	0
Throckmorton	3	140	1	0
Wichita	19	162	10	0
Wilbarger	9	246	4	0
Young	20	1,304	16	0
Total North Central Texas	236	18,372	118	12
Grand total North Central and West Texas, August	307	78,668	136	12
Grand total North Central and West Texas, July	431	92,845	199	12
Difference	124	14,177	63	0

Summary of Rigs and Wells Drilling
West Texas

County—	Rigs	Drg.	S.D.	Ttl.
Crane	14	39	3	56
Crockett	4	8	6	18
Howard	7	17	2	26
Jones	4	4	6	14
Mitchell	0	3	3	6
Pecos	22	12	9	43
Reagan	1	9	2	12
Upton	2	18	4	22
Winkler	13	21	9	43
Miscellaneous counties	5	39	34	78
Totals	72	168	78	318

North Central Texas

Archer	14	8	7	29
Brown	17	41	17	75
Callahan	4	10	7	21
Coleman	5	10	16	31
Cooke	12	27	6	45
Eastland	11	23	7	41
Jack	2	9	4	15
Montague	5	10	4	19
Shackelford	0	8	4	12
Stephens	2	10	5	17
Throckmorton	1	8	1	10
Wichita	4	9	2	15
Wilbarger	4	12	6	22
Young	15	28	12	55

Miscellaneous counties	6	29	29	64
Totals	102	342	127	471
Grand totals, August	174	410	205	789
Grand totals, July	102	429	228	759
Difference	72	19	23	30

ROCKY MOUNTAIN AREA
WYOMING
Summary of Field Operations

District—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Salt Creek	15	3,901	0 0	5	19	24
Big Horn Co.	0	0	0 0	0	4	4
Carbon Co.	5	350	0 3	3	11	14
Converse Co.	1	300	0 0	0	4	4
Crook Co.	1	0	1 0	0	0	0
Fremont Co.	2	0	0 2	2	10	12
Goshen Co.	0	0	0 0	0	1	1
Hot Springs-Wash. Co.	0	0	0 0	1	4	5
Hot Spgs. Co.	0	0	0 0	0	6	6
Johnson Co.	0	0	0 0	1	4	5
Natrona Co.	0	0	0 0	1	3	4
Niobrara Co.	0	0	0 0	0	4	4
Park Co.	3	370	1 1	4	15	19
Platte Co.	0	0	0 0	0	2	2
Sweetwater Co.	0	0	0 0	1	5	6
Sublet Co.	5	150	2 0	3	22	25
Uinta Co.	0	0	0 0	0	2	2
Washakie Co.	2	0	2 0	1	3	4
Weston Co.	1	0	1 0	0	0	0
Total, Aug.	35	5,071	7 6	22	119	141
Total, July	37	7,974	3 1	21	241	262
Difference	2	2,903	4 5	1	122	121

COLORADO
Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Total, Aug.	13	520	5 2	5	76	81
Total, July	4	390	0 0	8	77	85
Difference	8	130	5 2	3	1	4

NEW MEXICO
Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Total, Aug.	8	50	6 1	5	92	97
Total, July	6	5	5 0	6	116	122
Difference	2	45	1 1	1	24	25

UTAH
Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Total, Aug.	2	0	2 0	2	25	27
Total, July	0	0	0 0	1	39	40
Difference	1	0	2 0	1	14	13

MONTANA
Summary of Field Operations

Districts—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Cat Creek	0	0	0 0	0	9	9
Kevin Sunburst	65	5,386	13 9	2	51	53
Miscellaneous	9	130	5 3	2	72	74
Total August	74	5,516	18 12	4	123	127
Total July	62	4,383	27 5	5	127	132
Difference	12	1,133	9 7	1	4	5

EASTERN FIELDS
Summary of Wells Completed

Fields—	Comp.	Prod.	Dry	Gas
Allegany	52	257	1	1
Bradford	184	534	1	0
Middle Field	7	11	0	1
Venango-Clarion	25	34	1	4
Butler-Armstrong	18	25	1	5
Southwest Pennsylvania	10	5	3	5
West Virginia	68	436	13	30
Southeast Ohio	73	972	12	16
Total August	437	2,274	32	61
Total July	420	1,081	46	59
Difference	17	1,193	14	2

Summary of Work Under Way

Fields—	Rigs	Drg.	Ttl.
Allegany	12	29	41
Bradford	13	111	124
Middle Field	0	5	5
Venango-Clarion	2	16	18
Butler-Armstrong	9	10	19
Southwest Pennsylvania	5	33	38
West Virginia	31	130	161
Southeast Ohio	17	97	114
Total August 31	89	431	520
Total July 31	106	412	518
Difference	17	19	2

LIMA FIELD
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Wood	3	23	0 0	1	4	5
Hancock	1	25	0 0	0	3	3
Allen	1	20	0 0	0	4	4
Auglaize	4	104	0 0	0	7	7
Sandusky	2	40	0 0	0	1	1
Mercer	2	31	0 0	0	1	1
Van Wert	0	0	0 0	0	1	1
Seneca	1	0	1 0	0	3	3
Lucas	0	0	0 0	0	1	1
Ottawa	3	0	2 1	0	0	0
Shelby	0	0	0 0	0	1	1
Hardin	2	31	0 0	0	1	1
Wyandot	1	0	0 1	0	0	0
Darke	1	30	0 0	0	0	0
Paulding	1	0	0 1	0	0	0
Total August	22	313	3 3	1	27	28
Total July	21	264	2 1	2	28	30
Difference	1	49	1 2	1	1	2

CENTRAL OHIO
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Knox	4	0	1 3	1	3	4
Ashland	6	0	1 5	4	15	19
Medina	11	4	3 4	2	6	8
Lorain	4	0	0 4	0	4	4
Wayne	3	0	1 2	1	4	5
Holmes	10	328	2 1	8	6	14
Coshocton	4	20	0 3	1	5	6
Cuyahoga	9	0	2 7	0	10	10
Jackson	0	0	0 0	0	1	1
Summitt	0	0	0 0	0	2	2
Guernsey	2	0	0 2	0	1	1
Muskingum	0	0	0 0	1	0	1
Total August	53	352	10 31	18	57	75
Total July	35	78	11 21	19	78	97
Difference	18	274	1 10	1	21	22

KENTUCKY
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Tot.
Warren	3	74	0 0	0	9	9
Allen	7	760	4 0	0	14	14
Barren	51	389	17 1	0	13	13
Ohio	30	2,524	7 0	0	33	33
Daviess	5	83	2 0	0	6	6
Hancock	0	0	0 0	1	0	1
Cumberland-Monroe	13	23	8 0	0	1	1
Clinton	4	25	3 0	0	0	0
Simpson	1	7	0 0	0	0	0
Butler	0	0	0 0	0	1	1
Adair	0	0	0 0	1	0	1
Grayson	0	0	0 0	0	2	2
Wayne	8	28	6 0	0	4	4
Lee-Owsley	7	468	0 0	0	10	10
Estill	7	10	2 0	0	1	1
Morgan	0	0	0 0	0	1	1
Wolfe	0	0	0 0	0	1	1
Johnson-Magoffin	3	34	0 0	0	4	4
Floyd-Knott	0	0	0 0	0	6	6
Knox	0	0	0 0	0	3	3
Laurel	0	0	0 0	0	1	1
McCreary	1	10	0 0	0	1	1
Kentucky	140	4,434	49 1	2	111	113
Tennessee	15	46	11 1	0	23	23
Mississippi	0	0	0 0	11	19	30
Alabama	0	0	0 0	0	7	7
Florida	0	0	0 0	2	12	14
North Carolina	0	0	0 0	0	1	1
Total August	155	4,480	60 2	15	173	188
Total July	110	3,358	32 5	15	224	239
Difference	45	1,122	28 3	0	51	51

INDIANA
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Tot.
Blackford	0	0	0 0	0	2	2
Jay	1	3	0 0	0	5	5
Adams	1	0	1 0	0	2	2
Grant	0	0	0 0	0	1	1
Gibson	7	520	3 0	1	7	8
Pike	2	0	2 0	0	5	5
Daviess	6	130	3 0	0	4	4
Sullivan	1	0	1 0	0	2	2
Vigo	1	0	1 0	0	5	5
Allen	0	0	0 0	2	2	4
Knox	0	0	0 0	0	2	2
Dubois	0	0	0 0	0	1	1
Benton	0	0	0 0	0	1	1
Johnson	0	0	0 0	0	3	3
Marion	0	0	0 0	0	1	1
Martin	0	0	0 0	0	2	2
Monroe	0	0	0 0	0	1	1
Spencer	0	0	0 0	0	1	1
Bartholomew	0	0	0 0	0	1	1
Miami	0	0	0 0	0	1	1
White	0	0	0 0	0	1	1
Decatur	0	0	0 0	0	1	1
Shelby	1	0	0 1	0	0	0
Franklin	1	0	1 0	0	0	0
Montgomery	0	0	0 0	0	1	1
Hancock	0	0	0 0	0	1	1
Lagrange	0	0	0 0	0	1	1
Total August	20	653	12 1	3	54	57
Total July	16	525	6 0	2	47	49
Difference	4	128	6 1	1	7	8

ILLINOIS
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Tot.
Clark	2	0	2 0	3	2	5
Cumberland	2	2	1 0	0	1	1
Crawford	2	3	1 0	1	6	7
Lawrence	4	240	0 0	1	5	6
Wabash	8	145	5 0	0	4	4
Marion	0	0	0 0	0	2	2
Edgar	1	0	1 0	0	0	0
Jasper	0	0	0 0	0	1	1
Morgan	0	0	0 0	0	1	1
Marshall	0	0	0 0	0	1	1
Macon	0	0	0 0	0	1	1
Madison	0	0	0 0	0	2	2
Shelby	0	0	0 0	0	1	1
St. Clair	0	0	0 0	0	1	1
Taxwell	0	0	0 0	0	1	1
Total August	19	390	10 0	5	29	34
Total July	11	114	4 0	3	34	37
Difference	8	276	6 0	2	5	3

MICHIGAN
Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Tot.
Saginaw	23	375	1 0	3	37	40
Shiawassee	0	0	0 0	1	2	3
Gratiot	0	0	0 0	0	4	4
Huron	0	0	0 0	3	0	3
Macomb	0	0	0 0	0	1	1
Alcona	0	0	0 0	0	1	1
Muskegon	0	0	0 0	0	1	1
Crawford	0	0	0 0	0	1	1
Iosco	0	0	0 0	0	1	1
Wayne	0	0	0 0	0	1	1
Genesee	0	0	0 0	0	1	1
Charlevoix	0	0	0 0	0	1	1
Midland	0	0	0 0	0	1	1
Total August	23	375	1 0	7	52	59
Total July	26	407	4 0	11	50	61
Difference	3	32	3 0	4	2	2

KANSAS FIELDS

(Continued from Page 44)

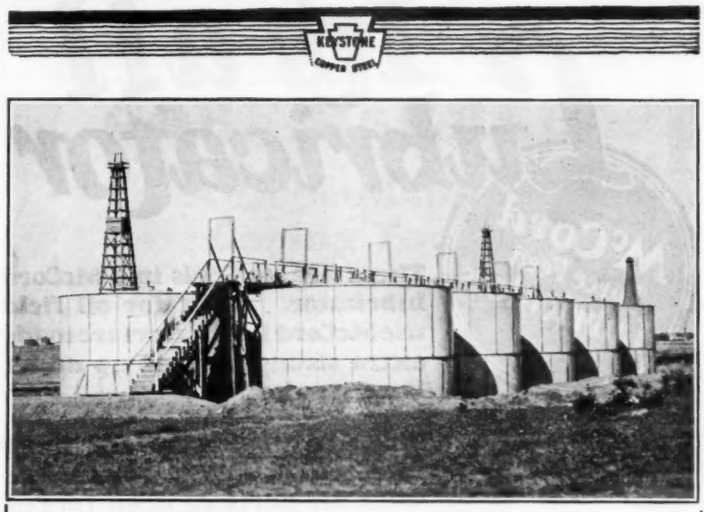
cor. SE, Section 17-21-10, is dry at 2,307 feet. Sheedy and others' No. 2 Jones, NE cor. NW SE, Section 19-21-10, drilled to 2,315 feet and plugged back to 2,175 feet and produced 5 bbls.

Marion County

Crow and others' No. 2 Townsend, NW cor. NE SW, Section 31-21-4, is drilling at 350 feet. Skow Brothers and others' No. 1 Vinguska, C NE NE, Section 23-18-3, is dry and abandoned at 2,604 feet.

Saline County

Mentor Oil & Gas Co. has the rig up for No. 1 Muir, SW cor., Section 17-15-2w. Johnson and others' No. 1 Davis,



Ten 1,000-bbl. Maloneys on Sue Walker No. 1 of the Carter Oil Company at Bowlegs.

THREE FACTORS IN MALONEY ECONOMY

MALONEY Bolted Steel Tanks save money for users because they (1) cost no more and last longer, (2) are exceptionally tight, thus preventing leakage and evaporation losses, and (3) can be erected with minimum loss of time at any location where needed.

MALONEYS last longer because made of the world's most durable sheet steel—rust-resisting Keystone Copper Steel. They are rendered remarkably tight by our patented "crimp" at seams and joints, and by the use of our special rubber packing and Gaso cement. They are quickly erected because stocks are conveniently located at all principal petroleum points, and all parts are interchangeable and easily fitted.

All seams are rigidly reinforced. Cleaning out plates are set flush with bottoms. Valve and deck equipment is the best to be had. Painted with Maloney Special Pearl Gray Paint.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
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Distributors at All Principal Petroleum Points.

Sizes: 12 to 5,000 Barrels

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Howell Aluminum "3-in-1" Vacuum Pressure Valve and Thief-Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety.

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY ALONE

It's all Lubricator

McCord Force Feed Lubricators

There are no frills in a McCord lubricator. Built for oil field use McCord lubricators are made extra strong to stand up under hard service.

McCord lubricators are built like a high grade automobile with all parts of drop forged steel. Numerous inspections in the course of manufacture along with a rigid final inspection insure long and satisfactory service.

Standard of the Oil Fields

Any pump unit can be removed for inspection or cleaning without disturbing any other unit and the only tool needed is a screw driver.

Is it any wonder no McCord lubricator has ever been known to wear out? That lubricators purchased ten and twelve years ago are still on the job.

Specify McCord lubricat "Standard of the oil fields" your next engine pump compressor.

Ask your National Supply salesman for further details.

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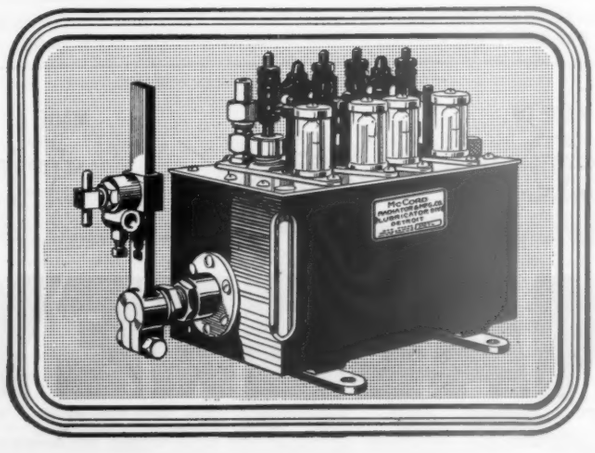

NE cor. NW SW, Section 29-14-2w, has been abandoned at 3,453 feet.

Sumner County

Roxana Petroleum Corp. is building the rig for No. 4 Shore, SW cor. SE, Section 24-31-2. Location was made for No. 3 Oxford townsite, Lot 16, Block 35, Section 11-32-2. Flitch and others made location for No. 1 Oxford townsite, Lot 16, Block 1, Section 12-32-2. Moore and others made location for No. 1 Oxford townsite, Lot 29, Block 31, Section 12-32-2. Trees Oil Co. is building the rig for No. 1 Oxford townsite, Lot 17, Section 12-32-2. Midco Oil Co. made location for No. 1 Oxford townsite, Lot 4, Block 48, Section 13-32-2. Stanley & Jarvis made location for No. 1 Oxford townsite, Section 14-32-2.

LOUISIANA-ARKANSAS

(Continued from Page 49)

during the week flowing 400 bbls. of clean oil from a depth of 3,703 feet. A derrick already is up for the second deep test on this lease. Magnolia Petroleum Co. is drilling at 2,350 feet in No. 26 Raines, Section 22, and at 3,425 feet in No. 21 Robertshaw, Section 23. Ohio Oil Co. is bailing casing in its deep test, No. 25 Smith, Section 12. Total depth of this hole is 4,603 feet. Pittsburgh Oil & Development Co.'s No. 1 Herndon, Section 15, is down 3,680 feet where the 6⅝-inch casing has been cemented. This company's No. 1 Huckaby, same section, is drilling lime at 3,675 feet. The Texas Company's No. 49 Caddo M. L. Co., Section 23, is drilling lime at 2,789 feet. No. 50, this lease, is in chalk rock at 1,794 feet. Operations have been started in No. 51, in which 15½-inch casing has been cemented at 199 feet. The Texas Company's No. 6 Herndon, Section 14, is drilling shale at 3,619 feet. No. 8 Herndon is coring at 3,519 feet. No. 9 Herndon has 10-inch casing cemented at 2,340 feet. No. 9 Herold is drilling hard lime at 2,830 feet, while No. 10 Herold is in chalk rock at 2,100 feet. In Section 15, this company's No. 10 Mabry is drilling lime at 2,948 feet, and No. 19 Raines at 2,952 feet.

Waskom and Greenwood

In the Waskom and Greenwood districts, Belchic & Laskey have a 7,000,000-foot gas well in No. 1 Sharp, Section 15-18-16, completed at a depth of 906 feet. These operators are rigging up for No. 2 on the same lease but to the south in Section 22. Greenwood Producing Co.'s No. 2 Angurs, Section 6-16-16, has been completed as an 8,000,000-foot gasser at 975 feet. This company has a new rig up for No. 1 McCutcheon, Section 15-17-16. B. A. Hardy also has completed No. 1 Bickham, Section 23-18-16, making 2,000,000 feet of gas from sand at 915 feet. Magnolia Petroleum Co.'s No. 1 Bell, Section 4-17-17, is drilling lime at 2,806 feet. This company's No. 1 Furrh, Section 28-18-16, has cemented 10-inch casing at 885 feet. Standard Oil Co.'s No. 2 Trosper, Section 34-18-16, is drilling lime at 3,245 feet. State Line Oil & Gas Co. has completed No. 5 Thigpen & Herold, Section 26-18-16, flowing 3,000,000 feet of gas from a depth of 901 feet.

Bethany Oil & Gas Co.'s No. 1 Offenhauser, Section 1-20-16, is waiting on a standard pumping rig at 2,270 feet. W. W. Dodson and associates' No. 6 Rives, Section 5, has had casing recemented at 1,865 feet. Falcon Drilling Co.'s No. 1 Schmidt, Section 27-20-15, is drilling at 1,704 feet. T. D. Gray and associates are fishing for casing in No. 1 Hart, Section 29-21-16. Total depth of the hole is 1,966 feet. The D. S. Richardson estate's No. 5 Youree-Randolph, Section 13-20-15, is drilling at 1,350 feet. Standard Oil Co.'s No. 179 Stiles, Section 33-21-16, is down 1,290 feet. Superior Oil Co. is drilling at 1,000 feet in No. 6 Youree, Section 26-20-15. Woodley Petroleum Co. has cemented 6-inch casing at 1,920 feet in No. B-2 Knight, Section 11-15-12. The latter test is in the extreme southeast corner of the parish.

LaSalle Parish

Hope Oil & Gas Co. has a sand at 1,558-70 feet in No. 4 Urania, Section 19-10-2e, Urania Field, and is waiting on a pumping rig. Natural Gas & Fuel Corp. has cemented 6⅝-inch casing at 1,523 feet in No. M-11 Urania, Section 20. Wingfield and associates' No. 2 Gibson, Section 2-9-1e, is drilling rock at 2,551 feet. In Section 7-10-2e, Zoder and associates have a 150-bbl. well in No. 4 Urania, which has been completed in sand at 1,515-20 feet.

Monroe District

Falcon Drilling Co.'s No. 1 Gladney, Section 5-21-7e , Morehouse Parish, is drilling lime at 2,850 feet. W. C. Feazel's No. 1 Faulk, Section 15-20-4e, is drilling at 1,610 feet. Natural Gas Producing Co. has abandoned No. 20 Crossett, Section 21-23-7e, after encountering salt water at 3,386 feet. This company, however, has staked a location for two more tests, Nos. 9 and 10 Tensas Delta, Section 27-22-4e. The Texas Company is arranging to test No. 1 Sively, Section 22-20-6e. It tested salt water at 2,340 feet but has been deepened to 2,375 feet.

In Ouachita Parish, C. W. Frierson has a derrick up for No. 1 Feazel, Section 17-19-4e. J. S. Gould's No. 1 Grayling, Section 11-15-2e, is drilling at 1,800 feet. Industrial Gas Co. has completed No. 1 Sullivan, Section 5-18-4e, making 4,000,000 feet of gas from a depth of 2,202 feet, and is rigging up for No. 2 on the same lease. Jordon Drilling Co.'s No. 2 Fudican, Section 25-18-4e, has been shut down at 2,710 feet. Ladell Properties, Inc., has a 13,000,000-foot well in No. 43 fee, Section 31-20-5e. This has been completed at 2,178 feet. A rig is up for No. 44 fee, Section 6-19-5e. Ouachita Natural Gas Co.'s D'Arbonne, Section 25-19-2e, which has been shut down since January, is being washed to the bottom at 2,760 feet. This company's No. 4 Leiber, Section 3-19-4e, is down 2,076 feet where 6-inch casing has been cemented.

In Union Parish, Natural Gas Producing Co. is drilling at 1,200 feet in No. 3 Peak, Section 5-20-4e. Southern Carbon Co.'s No. 1 Jackson, Section 20-20-4e, is down 1,850 feet.

Webster Parish

Crusaders Oil & Producing Co.'s No. 18 Hope, Section 24-21-10, is drilling rock at 773 feet. Magnolia Petroleum Co.'s No. 2 Branton, Section 6-22-10, is drilling at 1,343 feet. Magnolia Petroleum Co. has a location staked for No. 1 D. G. Cox, Section 22-21-10. This company's No. 3 Cox, Section 23-21-10, is drilling lime at 4,011 feet. A location also has been staked on the Cox farm, Section 27, for another test. Magnolia Petroleum Co.'s No. 4 Marshall, Section 21-21-10, is drilling at 2,304 feet. This company's No. 1 Walter-O'Bier, Section 32-23-9, has 10¾-inch casing cemented at 422 feet. Ohio Oil Co. has cemented 12½-inch casing at 600 feet in No. 4 Holloway, Section 23-21-10.

ARKANSAS

Smackover Field

In the Louann sector of Union County, W. H. Gilliland has abandoned No. B-1 Hodges, Section 1-16-17. It has been shut down since May after drilling at a depth of 2,565 feet. Smitherman & McDonald are setting 6-inch casing at 2,630 feet in No. B-4 Saxon 5-16-16. In Ouachita County, The Texas Company's No. 1 Davidson, Section 26-15-16, is drilling at 921 feet.

In the Norphlet district, E. M. Jones has cemented 6⅝-inch casing at 2,406 feet in No. 11 Murphy, Section 17-16-15, Union County. This test cored an oil sand at 2,403-09 feet. Lion Oil & Refining Co. is bailing casing at 2,350 feet in No. 6 Hays, Section 4-16-15. This test is down 2,350 feet. A derrick has been started for No. 7 Hays. Magna Producing Co. is reaming to set a short string of 4-inch casing at 2,466 feet in No. 1 Murphy, Section 15-16-15. Magnolia Petroleum Co. has cemented 6⅝-inch casing at 2,611 feet in No. 3 Murphy, Section 8-16-15. This company also has cemented a string of 4¾-inch casing at 2,746 feet in No. 6 Wilson, Section 17-16-15. Unity Petroleum Co. tested 1,500 feet of salt water and 40 feet of oil from a total depth of 2,676 feet in No. 12 Roper, Section 3-16-15. No. 15 Roper has been completed at a depth of 1,978 feet pumping 22 bbls. of oil

and 33 bbls. of salt water. On the Ouachita County side of the field, Marine Oil Co. is setting 6-inch casing at 2,360 feet in No. 14 Snyder, Section 34-15-15. Owenwood Oil Corp. is bailing No. 7 Snyder, Section 34-15-15, to test 8 feet of sand at 2,627-35 feet. Sam Richardson's No. 2 Rhoten, Section 32-15-15, is in a broken formation at 1,999-2,048 feet.

Stephens Field

Brewer and associates' No. 1 Curry, Section 32-15-19, Ouachita County, has been shut down at 400 feet. Buffalo Oil Co.'s No. 3 Culp, Section 22, also has been shut down after drilling to 2,075 feet. Louisiana Oil Refining Corp. is waiting on a standard pumping rig for No. 1 Culp, Section 22. This test is in a broken sand at 2,160-85 feet.

Nevada County

Autrey Oil Co. has cemented 6-inch casing at 1,170 feet in No. A-3 Martin, Section 6-14-20, and has a derrick up for another test, No. C-1 Martin. Humble Oil & Refining Co. has a derrick for No. 1 Fairchild, also in Section 6. J. J. O'Brien has completed two more wells in Section 1-14-21, the No. B-2 Haynie, pumping 150 bbls. from a sand at 1,183-91 feet, and No. 3 Moss, pumping 150 bbls. from sand at 1,167-74 feet. His No. B-5 Haynie also has a sand at 1,-163-75 feet and 6-inch casing has been cemented. His No. B-4 Moss has 6-inch casing cemented at 1,147 feet for testing a sand at 1,147-57 feet. A derrick is up for No. B-5 Moss.

LA.-ARK. WILDCATS

(Continued from Page 49)

any Oil & Gas Co. has started drilling in No. 2 Dodson, Section 16, and is down 168 feet. Magnolia Petroleum Co. is drilling shale at 1,128 feet in No. 1 Dodson, Section 16. Simms Oil Co. is drilling at 1,700 feet in No. 1 Dodson, Section 15. No. 2 Dodson is down 1,045 feet. The Texas Company is coring shale at 3,112 feet in No. 1 Mays, Section 27. Atlantic Oil Producing Co.-Woodley & Collins' No. 1 M. A. Farrington, Section 22, is down 3,083 feet where 6-inch casing has been cemented. The same operators' No. 1 on the J. S. Farrington farm, Section 23, is coring at 3,084 feet. No. 1 Matlock of these operators, Section 23, has drilled out the 6⅝-inch plug.

Doern and associates' No. 1 Tjomas, Section 10-22-11, southeast of the Carterville district, is slopping over 2 or 3 bbls. daily following the setting of 2½-inch tubing. This well is at a total depth of 3,045 feet where it has 1 foot of sand.

Catahoula Parish

Lochnager Oil & Gas Co. has abandoned No. 1 Beasley, Section 26-9-6e. This is the test which had a gas blowout at 3,093 feet but which later tested salt water.

Claiborne Parish

Magnolia Petroleum Co.'s No. 1 Lee, Section 16-22-8, is reaming to the bottom at 4,039 feet.

DeSoto Parish

Clark & Melat are arranging to test 13 feet of sand and lime encountered at 2,600-13 feet in No. 2 Payne, Section 12-11-16. Dixie Oil Co.'s deep test, No. 1 Jenkins, Section 9-12-11, is drilling brown lime at 5,550 feet. Helm & Jarman have abandoned No. 1 Joyner, Section 28-11-12, at a depth of 3,018 feet. Hoosier Oil Co. also has abandoned the locations for Nos. 1 and 2 Lanier, Section 5-11-11. William Sebastian Syndicate has gone into the hole again at No. 1 Sebastian, Section 11-10-13, and is reaming to the bottom at 3,405 feet. This test has been shut down since June. The Texas Company's No. 15-C Sample, Section 35-13-12, has an estimated 1,500,000 feet of gas at 2,550 feet but is shut down waiting orders.

Franklin Parish

Cowell and associates have abandoned No. 2 Moore, Section 12-11-6e. This test had a blowout while drilling at 1,385 feet but later killed itself after damaging the hole considerably.

Grant Parish

Swope and associates have cemented 6⅝-inch casing at 1,590 feet in No. 4 fee, Section 18-9-1e. Total depth is 1,595 feet.

Natchitoches Parish

Lawson & Pharris are drilling at 560 feet in No. 2 Clark & Morse, Section 3-5-6. Ohio Oil Co. is coring at 2,780 feet in No. 2 L. & A., Section 26-13-6w.

Rapides Parish

Carolina Louisiana Oil Co. has abandoned the derrick for No. 1 Lee, Section 1-4-1e.

Red River Parish

J. H. Askew has a derrick up for No. 1 Richardson, Section 25-13-11. The Texas Company has cemented 6-inch casing at 2,502 feet in No. 36-B Brinkerhoff, Section 30-13-10.

Richland Parish

Gulf Refining Co. has cemented 10-inch casing at 919 feet in No. 2 Marshfield, Section 29-17-6, and 6⅝-inch casing at 2,335 feet in No. 1 Ouachita National Bank, Section 25-17-5e. Moody & Seagraves are drilling at 1,150 feet in No. 1 Hemler, Section 20-16-6e. They have cemented 10-inch casing at 915 feet in No. 1 McCoy, Section 32-16-6e, and are rigging up for a third test, No. 1 Jones, Section 15-18-7e. Natural Gas & Fuel Corp. has set 10-inch casing at 921 feet in No. 1 Sartor, Section 20-16-6e. Ruston Drilling Co. is down 2,100 feet in No. 2 McVoy, Section 8-16-6e. Standard Drilling Co. has cemented 8¼-inch casing at 1,055 feet in No. 1 Delta Hardwood Co., Section 22-16-7e. This test resumed drilling the past week after a shut down since April. Texas-Louisiana Carbon Co.'s No. 1 Broughton, Section 1-15-6e, is drilling gumbo at 2,647 feet. Woodley Petroleum Co. and Triangle Drilling Co. are drilling at 400 feet in No. 1 Hemler, Section 31-18-7e.

Sabine Parish

Arkansas Fuel Oil Co. has cemented the bottom of the hole at 3,980 feet in No. 10 Logan, Section 32-10-13, Pleasant Hill district. This was done because of a cavity. This company's No. 1-A Logan, same section, is to be deepened. It was dry with only a showing of oil at 3,106 feet. Foster and associates' No. 1 Nabors, Section 30-10-12, also tested dry with only a showing of oil at 3,203 feet. It is shut down waiting orders. Frazier and associates are drilling at 620 feet in No. 1 Harris, Section 29-10-12. Magnolia Petroleum Co. is drilling gumbo at 1,065 feet in No. 2 Hall, Section 33-10-12. This company is arranging to test its No. 1 Rembert, Section 32-10-12, which is at a total depth of 3,240 feet. Moffett and associates' No. 2 Moore, Section 5-9-12, is drilling at 2,690 feet. A. H. Tarver's No. 1 Long Bell, Section 5-8-13, is drilling at 2,010 feet. H. P. Tate's No. 1 Cook, Section 23-10-11, has been shut down at 3,066 feet.

In the Zwolle district, L. M. Emlet's No. 7 Bowman, Section 14-7-14, is drilling at 2,655 feet.

Webster Parish

W. T. Hunt's No. 1 Bisteneau, Section 35-18-10, has been abandoned after drilling at 1,040 feet. Shreveport-El Dorado Pipe Line Co.'s No. 1 Gamble, Section 33-20-8, is drilling lime and shale at 2,707 feet.

West Carroll Parish

Palmer Corp.s No. 1 Pioneer Cooperage Co., Section 16-20-10e, has been shut down at 2,641 feet. Phillips Petroleum Co. is arranging to set 6⅝-inch casing at 2,240 feet in No. 1 Marion, Section 32-20-9e.

Winn Parish

Ohio Oil Co. is drilling rock at 62 feet in No. 1 Edenborn, Section 31-10-4w. This company's No. 1 Rolen, Section 9-12-1w, is down 1,860 feet.

ARKANSAS

Union County

Booth and associates are building a derrick for No. 1 Rowland, Section 8-17-11. This is a rank wildcat in the extreme eastern part of the county. In Section 21 of the same district, Pitcher and associates also are building a derrick for No. 1 Arkansas Timber Co. W. R. Keever's No. 2 Ezell, Section 12-17-15, is drilling rock at 3,119 feet. Magnolia Petroleum Co. is coring a hard sand at 2,806 feet in No. 1 Caroll, Section 1-17-14. Mazda Oil Corp. is coring at 2,095 feet in No. 1 Boyd, Section 9-17-15. Ohio Oil Co. is drilling at 1,918 feet in No. 2 Crain, Section 1-17-14. Owenwood Oil

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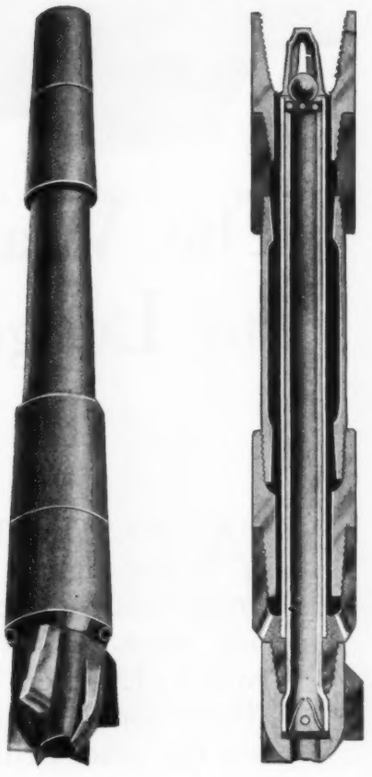

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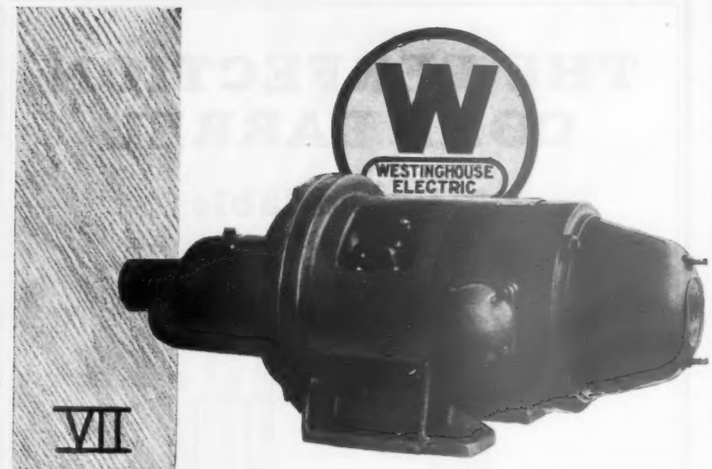

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Corp.'s No. 1 Goode, Section 31-16-13, has been shut down at 3,107 feet. It cored a salt water sand at 3,031 feet and after being deepened to 3,107 feet failed to pick up the producing sand encountered in the Ohio Oil Co.'s No. 1 Crain, three-quarters of a mile southwest. Rice and associates are drilling at 2,689 feet in No. 1 Newton, Section 13-17-16.

Ouachita County

H. M. Harrell is drilling at 1,475 feet in No. 1 Camden Coal & Clay Co., Section 12-12-18. Magnolia Petroleum Co.'s No. 1-B Stout, Section 28-14-16, encountered a salt water sand at 2,400 feet. Moody Oil Corp. has a rig up for No. 1 Bacon, Section 12-11-18.

Ashley County

Glassell and associates' No. 1 Keller, Section 10-19-5, is being washed to the bottom at 1,906 feet.

Bradley County

Arkansas Fuel Oil Co. has abandoned as dry at 3,430 feet its No. 1 Arkansas Timber & Land Co., Section 25-16-12.

Calhoun County

Genther and associates have started drilling in No. 1 Stout, Section 3-14-16.

Columbia County

Tunica Petroleum Co. has abandoned No. 1 Bodcau, Section 27-19-23, after drilling to 3,240 feet. No test was made.

Miller County

Guest and associates are coring gray sand at 2,276 feet in No. 1 M. & P. Bank, Section 30-15-26. Lenz and associates have cemented 10-inch casing at 70 feet in No. 1 Mann, Section 22-15-26.

POSSIBILITIES OF SOUTHEAST COLORADO

(Continued from Page 34)

several faults noted have throws varying from 50 to 100 feet.

Directions of Folding and Faulting

There are two sets of folding and faulting in this area. One set of folding has a northwest strike, and the other a north-northeast trend. The first trend is roughly a continuation of the Wichita-Amarillo Uplift, the second trend does not parallel the Rocky Mountains as would be expected, but diverges enechelon northeast almost at right angles to the first strike, which apparently belongs to an earlier period of folding. But some folding is found with a direction intermediate in strike, between the two major directions, and cannot be definitely tied to either set of folding.

Stratigraphy

The surface beds in this area belong to the Mesozoic system, principally of Cretaceous age. At a few places in the central part of the Sierra Grande Uplift, Triassic red beds are exposed. The top of the great arch on the Colorado side is covered principally by the Dakota and the Purgatoire sandstones of Cretaceous age. For the relationship of these various beds see Table 1 and the cross section. The Dakota and the Purgatoire sandstones total 200-250 feet in thickness and are largely responsible for the rough topography of the area. Just above the Dakota sandstone is the Graneros shale, above the shale the Greenhorn limestone, next the Carlisle shale, then the Timpas limestone, and topping this the Apishapa formation. The information given in the stratigraphic section was obtained from surface data, from water well logs and from the logs of deep oil tests, and applies more particularly for the area from the Ramsey Brothers' well in Cimarron County, Oklahoma, northwest to La Junta, within which belts as shown on the map enough drilling has been completed to furnish a rough estimate of underground conditions.

Correlations

It is too early to correlate the deep lying beds of southeastern Colorado with the beds that carry oil elsewhere. However, the beds in Russell County, Kansas, and those in the Ramsey Brothers' well in Cimarron County, Oklahoma, are apparently very closely related. The oil in the Ramsey Brothers' test may, however, be coming from a transition zone between the basal Permian and the upper Pennsylvanian measures. The Amarillo production is reported by some geologists as Pennsylvanian, but others are definitely Permian, equivalent to the Albany beds of North Central Texas. Until additional work has been done, it is well to leave definite correlations for the future, but it is safe to classify the limestone beds in the Ramsey well in Permo-Pennsylvanian. This, however, still leaves the correlation unsettled.

Igneous Rocks

Two Buttes, Prowers County, has largely been affected by the presence of an igneous plug which is probably the surface expression of a deeply buried intrusive of large size. Some local metamorphism, such as baking of the sediments has taken place; and any oil once present in the beds near the intrusive have in all likelihood been dissipated by the heat.

Dikes

A few dikes cross southeastern Colorado. These dikes are mainly of dark basic rock, basaltic in character and form characteristic columnar structures at right angles to the dike walls. One large dike 50 feet thick, trending northwest, is found 3 miles south of the Model well, which is in Section 11-30-60. Another dike occurs near Trinchera, southeast of Trinidad. Other dikes are found in the Apishapa area, northwest of the Model well. None of these dikes so far as noted cut the tops of local structures. The Mesa de Maya plateau, on the southern part of the Sierra Grande Uplift, is covered with laval flows of dense basalt type similar to the dike material, also much ashy volcanic material is present. Extrusive material extends over a wide area in southeastern Colorado. There may be some folding beneath the lava-covered area, but it cannot be determined from surface evidence, as the flows have not been folded.

No instance of regional metamorphism have been noted in southeastern Colorado. An interesting occurrence is that oil is found in a basalt dike near Trichera, Las Animas County, Colorado. This oil is found in vigs and cavities (blowholes in the basalt formed by escaping vapors and gases). It is most likely that this oil comes from distillation of the Graneros and the Carlisle shales through which the dike cuts rather than from deeper seated sources in Pennsylvanian sediments. The upper Graneros and the Carlisle shales when distilled are reported to yield from 1 to 5 gallons of oil to the ton. However, oil from the Little Mustang Creek seepage in Section 36-30-52, in Dakota beds cannot very well be traced to these upper sources. In this latter case the oil must come from some source below the Dakota beds as the Graneros and the Carlisle shales are not present in the Mustang Creek area.

Unconformity

Angular unconformity between the Cretaceous and the underlying beds is found at several localities on the south part of the Sierra Grande Arch, but these localities are in New Mexico and in Oklahoma, or are on the Colorado-New Mexico boundary. The unconformities reported there are quite marked, especially the unconformity found in Cimarron Canyon. However, there is good evidence to show that the marked angular unconformities of 10 to 20 degrees are due to cross bedding. Where the interval between the Morrison beds changes there is without doubt unconformity, but hardly enough to be called angular. This study deserves a paper by itself. In the central part of the arch, especially at Johnny Creek in 28-52, Muddy Creek in 28-52, and in Chaquaque Creek, in 29-56, the red beds show no evidence of angular unconformity with the overlying Cretaceous beds, nor is such the case in the Rocky Mountains near Walsenburg and Pueblo, so the angular unconformities, if existent in northeast New Mexico and on the Colorado-New Mexico line must be local in extent. Folds mapped in northeast New Mexico, both on the red beds and also on the lower Cretaceous beds show a higher degree of dip in the red beds than in the overlying Purgatoire and Dakota beds of Cretaceous age. In other words, in those places where both sets of beds have been mapped the gentle folding in the Cretaceous beds is intensified in the deeper red beds. This condition at least removes the fear entertained by some oil geologists that gentle folding in the Cre-

taceous beds does not carry into lower measures, a condition very different from southwest Texas, but quite to be expected in the Rocky Mountain area.

From all evidence the underground conditions at the Ramsey Brothers well certainly bear some relationship to surface conditions. In Oklahoma, especially at Tonkawa and at Garber, the geologist finds the steep dipping Wilcox measures more with depth although the surface dips are low. The surface and the underground highs in many oil fields do not always conform, but at least the surface highs are the best guides geologists have yet found in advance of drilling to afford a starting point to determine underground conditions.

Seepages and Oil Showings in Wells

In Section 26-30-52, on Little Mustang Creek and along the basalt dike near Trinchera, Colo., are found live seepages of oil. Also the Nee No She test in Section 18-20-46, Kiowa County, the Las Animas well in Section 16-23-52, Bent County, are reported to have had showings of oil and gas. Of all the tests, that at Red Rock is on a good fold, and that test was shallow, and on the highest part of the fold. Aside from these wells the nearest well showing any quantity of oil is the Ramsey Brothers test in Section 25-5n-5e, Cimarron County, Oklahoma, and variously reported good for from 20 to 50 bbls. This test is located down the southeast flank of the fold.

Expected Oil Area

The top of the marine Pennsylvania limestone beds on the Sierra Grande Arch should be encountered at depths of 2,500 to 3,000 feet, dependent on where the test wells are situated. It is quite likely that oil may be encountered in the Pennsylvanian red beds, just above the marine series. In the marine series there are several sands which should form good reservoirs for oil. Again, porous limestone beds might be present. In any new area as slightly tested as southeastern Colorado, wells on structure may encounter oil from 2,500 feet on. The change in sedimentation may and probably will cause a limestone or shale in one part of the area to grade into a sand or sandstone toward the old shore line. As regards such a shore line it is now definitely known that the old shore line must be southwest of the Rush Creek, the Nee No She in Kiowa County, the Standard of California in Cheyenne County and the Two Buttes tests in Powers County. The Sangre Cristo Mountain range, extending from Trinidad north and northwest to Walsenberg, shows some marine beds, but mainly continental or very near-shore deposits. Somewhere between the mountains and the deep wells mentioned the condition most favorable for the origin and accumulation of oil will be found. Only drilling can determine the most favorable spots. That a favorable area exists is evidenced by a Las Animas (Bent County) well log, which shows a favorable sedimentary condition in this intermediate area. The presence of a granite area near the New Mexico line must be expected, due to the United Oil Co.'s test in northern Union County, New Mexico. Geological deductions cannot, however, be safely carried any further than this.

Whether or not the Mississippian, Devonian, and Ordovician beds occur within drilling depths, only the drill can tell. If a recent statement is correct, Mississippian fauna were reported in both the Rush Creek test of the California Co. in Cheyenne County, and in the Las Animas test in Bent County.

Thought Condemned

Prior to the deep tests drilled at Two Buttes, Sections 30-27-45, the Nee No She, Section 18-20-46, the Rush Creek, and the Las Animas well, Bent County, and the Ramsey Brothers test in Cimarron County, Oklahoma, most geologists condemned the area because of lack of source beds for oil. If was known that some 400 feet of marine Pennsylvanian and older beds occurred in the Sangre Cristo Range on the east flank of the Rocky Mountains, 20 miles northwest of Trinidad, but for some unexplained reason, it was thought that the red beds (Triassic, Permian and Pennsylvanian) would underlie most of southeastern Colorado. This opinion has, however, been greatly changed by recent findings in the deep tests mentioned. A study of these logs reveals that there is a thickness of at least 1,000 feet of marine Permian and Pennsylvanian limestones, sands, sandstones and shales, and furthermore, that good oil showings were found. Two of these wells occur on mapable structure, although the tests were not situated at the best places. One of these tests, the Ramsey Brothers test, had only 5 feet of pay formation. The Two Buttes test, the other deep test on definite structure, had so far as reported no sand of consequence, although some showings of oil. Of the other three tests, two, the Nee No She and the Las Animas tests, were not on any visible surface structure, but good oil showings are reported in the well logs. In the Standard of California test in Cheyenne County, only a thin sandstone and some oil showings were found. This test was on a structure that was largely determined from water well data, and it is an open question as to whether or not a structure exists there. Table 2 gives a summary of the wells drilled.

Review of Evidence

Reviewing all the evidence offered so far, the Ramsey Brothers test, situated low on structure, shows a 20-bbl. well in a 5-foot pay streak. Deeper drilling higher on structure may show better sand conditions. The Two Butters test may be classed as lacking sand. The Standard of California test showed some sandstone, but mainly limestone as is the case in the Nee No She well, which reports oil showings. The Las Animas test shows excellent sand conditions and besides some oil and gas indications, which proves there is an area which is favorable for finding oil, if favorable structural conditions for oil accumulations be found. Just how far this favorable area will extend is problematical.

A great structural arch or uplift of the beds passes through this area. It is thought by many geologists that a granite core will be found near the south part of the arch, close to the Colorado-New Mexico boundary line. The evidence for this theory is based on granite found in the test of the United Oil Co., Union County, New Mexico at 1,900 feet. Several other tests, notably that of the Mustang Oil Co., 2,000 feet deep, in northeast Las Animas County, the Johnny Creek test northeast Las Animas County, 1,400 feet deep and the Red Rock test, central Las Animas County at 1,871 feet deep did not encounter granite and did not penetrate the limestone series found in the deep tests further north. Of these tests, only one, Red Rock, was within 300 feet of the depths of the beds of the United Oil Co. test so such logs throw little light on the subject, but at least show that granite was not encountered at a shallower depth than in the United Oil Co. test.

Limit Not Set

If granite were found to underlie this area, as is the case in northeastern New Mexico, it would terminate the oil possibilities, and mark the old land mass around which the possible oil bearing sediments were laid. At present, this limit has not been set, but the well of the United Oil Co., drilled in northeast Union County, New Mexico, marks the limit in that direction. The deep Rush Creek test of the California Co. in Cheyenne County, and the Nee No She test indicate not only a deeper basin condition to the north, but show that the Pennsylvanian sediments are there mainly limestones. These wells then roughly mark the northern limits for testing. The intermediate Las Animas, Bent County, well show good sandstones as well as limestones, which could act as oil reservoirs. However, porous limestone reservoirs must be considered as possible reservoirs, so that the California and Nee No She wells must not be taken as too definite limits.

The stratigraphic problems are by no means simple ones. How far south do the Pennsylvanian beds extend on the arch and what are their value? The second question is answered by a number of well logs that show conditions similar to those in the oil producing areas near Amarillo. The first question is problematical. From the occurrence of 400 feet of fossiliferous limestone and sandstones of Pennsylvanian and lower ages

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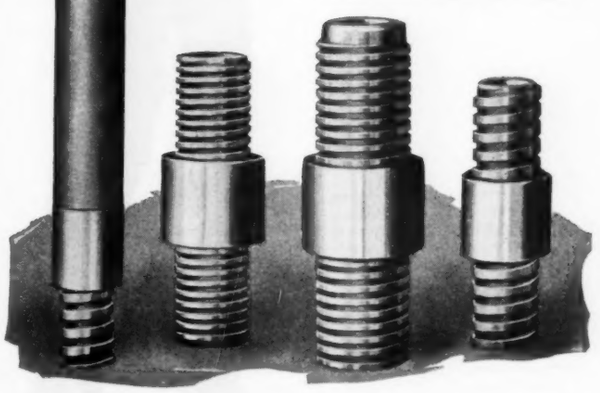

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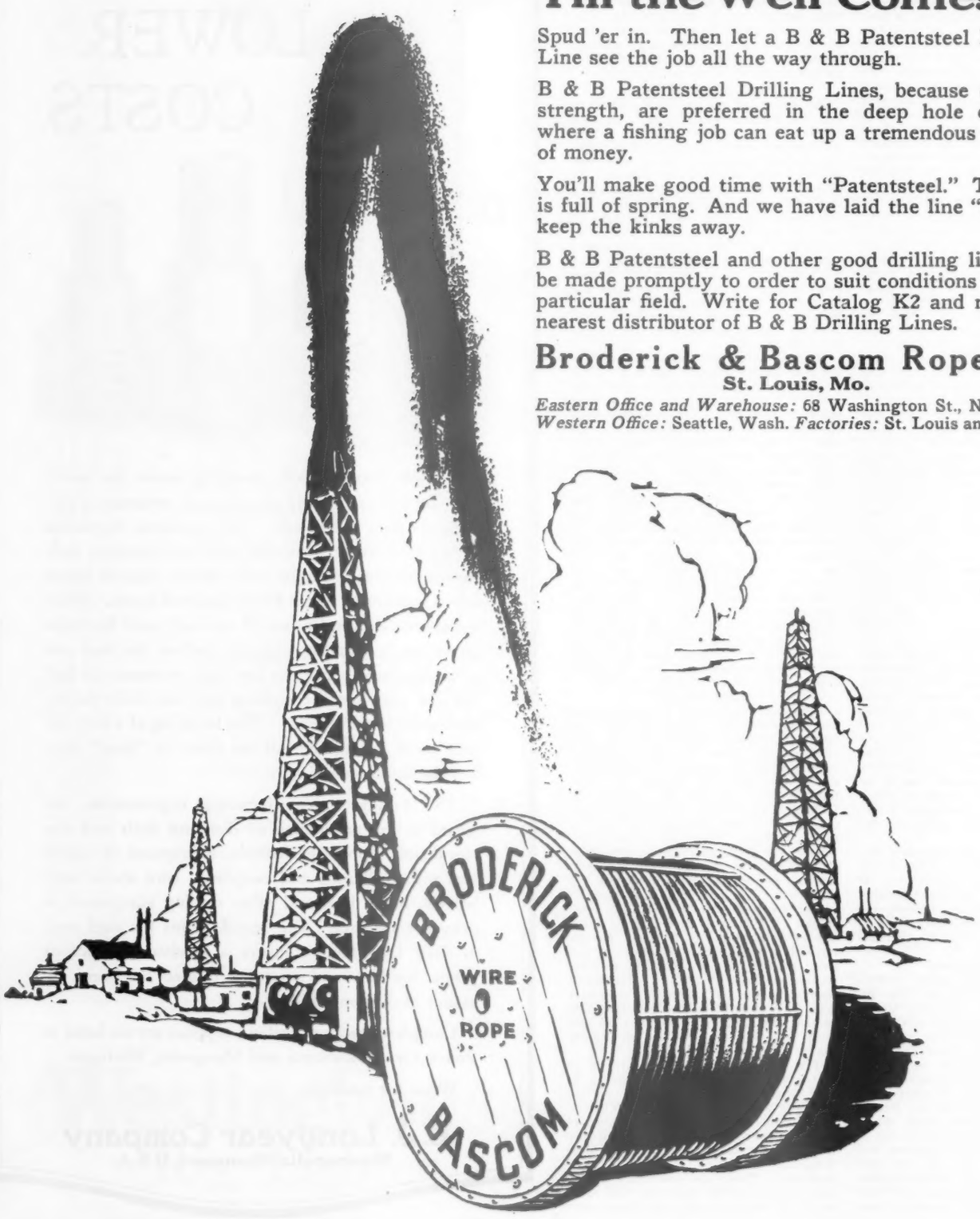


J472

in the Culebra Range northwest of Trinidad and the limestone series in the Ramsey well, it seems fairly safe to draw the conclusion that a line drawn from Trinidad to the Ramsey Brothers well on the Colorado side will show favorable Pennsylvanian sediments, although the thickness of the beds are likely to be less on the southwest boundary than further east and north. This statement is made with reservations, but seems safe. The United Oil Co.'s test in northeast Union County, New Mexico, encountered granite at 1,900 feet and this well was close to the Colorado state line. However, the old shore line will be wavy and indentations will be found. Again it may well be the case that the Sierra Grande Uplift has a granite core, extending farther north than this line would indicate. The paleogeography of this area cannot be fully determined until more well history furnishes the necessary data.

Summary

From all the evidence so far studied, the following points are clear:

1. Of three tests known to be situated on good structure in this area, not one was drilled deep enough to reach the Permo-Pennsylvanian beds.

2. Of five deep tests, only two were located on surface structure, and one of these two, Two Buttes, is cut by a plug and had little sand. The other, the Ramsey test, in Cimarron County, Oklahoma, is reported good for 20 bbls. per day, but the pay horizon is only 5 feet thick, and the test is situated low on structure.

3. One deep test, however, that at Las Animas, Bent County, showed favorable sand conditions and some oil showings, but is not situated on local structure. This well is most significant as it evidences an area of good sands.

4. Local foldings of Mid-Continent type with 20 to 100 feet of closure is found in the area. Most of the folding shows from 20 to 50 feet of closure, some no closure, but good folds of terrace type.

5. Some seepages are known, one on Mustang Creek, Las Animas County, likely to be from possible deep sources.

6. Drilling depths over most of the area will range from 2,500 to 4,500 feet to reach the top of the marine Permo-Pennsylvanian beds.

7. Drilling experience in northern New Mexico leads to the conclusion that granite is likely to be encountered over the southern part of this area. The granite area cannot be defined at this time.

8. Angular unconformities found on the New Mexico-Colorado line are doubtful. Any folding in the Dakota beds is there accentuated in the lower red beds. Further north angular unconformities are certainly not present and accentuation in the dip of the lower beds is not noticeable.

9. Heavy faulting is not common but some faulting occurs throughout the area, with throws or vertical displacements of 50 to 100 feet.

10. Very little igneous activity has taken place in the northern portion of the Sierra Grande Arch. A few dikes and one plug are found north of the New Mexico line. Also close to the state line volcanic activity of recent age is plainly evidenced by volcanic cones and lava flows, especially in the Mesa de Maya area, near Branson, Las Animas County, Colorado.

Conclusion

Weighing the evidence pro and con for this area, the conclusion shows that a new era of promise and importance, one that justifies considerable prospecting, lies in southeastern Colorado. Few new areas have as much reason to justify prospecting as this one possesses. It is certainly too early to safely predict commercial oil fields in southeastern Colorado, but there are good reasons to expect them. However, only a careful drilling campaign will disclose the future possibilities.

Acknowledgements

I am indebted to Alexander McCoy, vice president of the Marland Oil Co. of Colorado, for the data he has furnished me, and the theories he has advanced to C. D. Johnson of the same organization, for his many courtesies in furnishing data and information, and to Roy Holloman of Denver for much valuable data. I have drawn freely on N. G. Darton's reports from Bulletin 726 and Professional paper 101, United States Geological Survey, and Bulletin 19 of the Colorado State Survey.

TABLE I
Formations in Las Animas Area
Otero and Bent Counties, Colorado

Cretaceous Nio-Benton Series	Apishapa shales	500
	Timpas limestone	200
	Carlisle shale	180-200
	Greenhorn limestone	40-55
	Graneros shale	140-160
Cretaceous	Dakota S-S	80-100
	Purgatoire formation	125-175
	Morrison formation	150-200
Jurassic	Red Beds	2,300
Triassic Permian Pennsylvanian	Thin limestones, sandstones, shales marine shales, limestones and sandstones	1,000
Pre-Pennsylvanian		200

TABLE II
WELL TESTS IN SOUTHEAST COLORADO

Well—	Location	County	Depth Completed	Oil if Any	Structure
Ramsey	27-5n-5e	Cimarron, Okla.	4,250	Oil showing (4,100 feet) 20 bbls.	50 feet down on fold
Two Buttes	30-27-45	Prowers, Colo.	5,020	Several showings (thin sand)	Fold around plug
Nee No She	18-20-46	Kiowa, Colo.	4,130	Numerous showings (very thin sand)	No folding
Rush Creek	19-16-48	Cheyenne, Colo.	5,060	Gas-oil, one sand 3,885-40 feet (thick)	Fold determined from water well log?
Las Animas	16-23-52	Bent, Colo.	3,395	Oil-gas, numerous good sands, 3,000 feet	Folding
Mustang No. 1	36-30-52	Las Animas, Colo.	1,738	Oil at 1,300 feet	Folding
Mustang No. 2	36-30-52	Las Animas, Colo.	2,000		Folding
Johnny Creek	1-28-52	Las Animas, Colo.	1,400		On side terrace 40 feet down
Red Rock	7-29-56	Prowers, Colo.	1,871	Oil showings	Folding
Lamar II	35-22-46	Prowers, Colo.	2,452	Oil sand, lost hole	Folding
Lamar III	35-22-46	Prowers, Colo.	1,390		No folding
Rio Vista	35-22-46	Prowers, Colo.	2,780	Oil and water, 2,100 feet	No folding

DRILLING SOUTH EAST COLORADO
May 1927

Phillips-Middleton	26-34-48	Las Animas County	3,600	Drilling	On side fold
Timpas	29-26-57	Otero, Colo.	600	Drilling	Dome—35-ft. closure
Model	11-30-60	Las Animas, Colo.	1,700	Drilling	Dome—100-ft. closure
Parker-Club	34-32-56	Las Animas, Colo.	1,500	Drilling	

SOUTHWEST TEXAS

(Continued from Page 51)

to northeast lines, has sand at 2,309-12 feet. Trussell, Cezeaux & Putman's No. 1 Bruni, Survey 10, located 150 feet to northwest and 450 feet to northeast lines, is ready to spud in.

Simms Field

Breen-Woodward and others' No. 1 Dinn, Survey 666, is a location 1,170 feet to north line and 150 feet to east line.

Piedras Pintas Dome

Humble Oil & Refining Co.s No. 7 Walsh, Survey 185, located 2,050 feet to east line and 1,750 feet to north line, has set 13-inch casing at 350 feet.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 26 Merchants State Bank, Survey 415, located 1,600 feet to north line and 1,000 feet to west line, is on sand at 1,232 feet.

Albercas Field—Webb

Magnolia Petroleum Co.'s No. 1 Yeager-Strolman, Block 64, located 150 feet to SW cor., has derrick up. O. W. Killam's No. 6 Bruni, Block 34, located 565 feet to west line and 150 feet to north line, is coring at 2,300 feet.

Aviator or Bruni Extension

Pittman & Moriarty's No. 1 Puig, Block 4, located 500 feet to east line and 850 feet to north line, has set casing at 1,694 feet. Columbia Petroleum Co.'s No. 17 Puig, Block 57, located 150 feet to northwest corner, is setting casing in sand.

Carolina-Texas Field

D. J. Simmons' No. 2 de la Garza, Survey 335, Block 8, located 150 feet to southwest corner, is preparing to resume. Breen & Woodward's No. 2 Webster, NW NE Survey 684, is location. Houston Oil Co.'s No. A-2 Barnsley, Survey 268, Block 12, located 400 feet to north line and 350 feet to west line, is drilling at 1,168 feet. T. P. Morgan's No. 2 de la Garza, Survey 335, Block 23, located 400 feet to north line and 350 feet to west line, is drilling at 1,800 feet. Magnolia Petroleum Co.'s No. 2 Webster, SW NE Survey 684, located 150 feet to northwest corner, is moving on.

Cole Gas Field No. 2

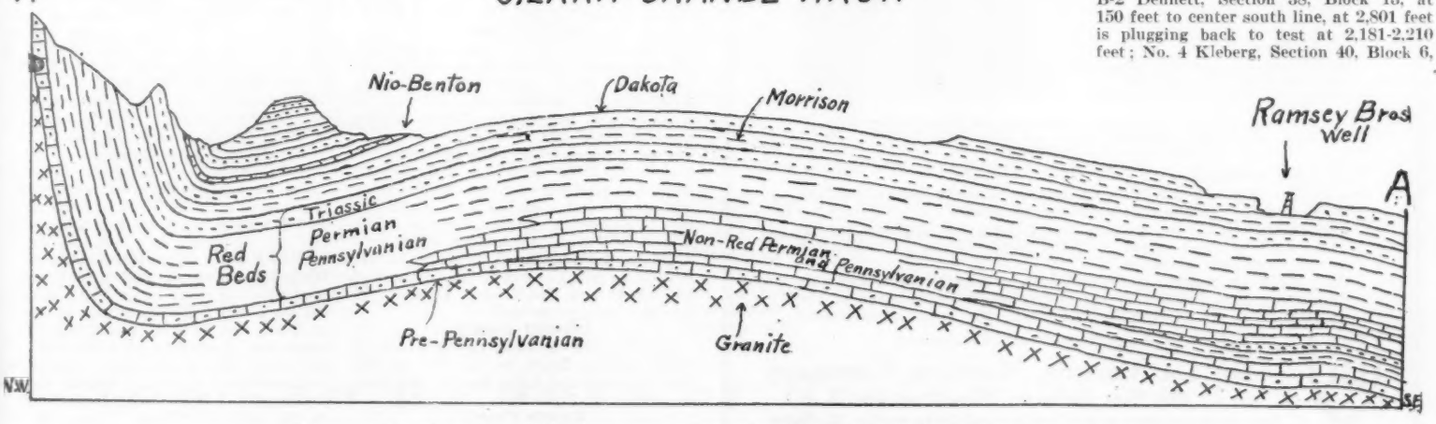
Magnolia Petroleum Co.'s No. 1 Benavides, Survey 2,234, located 420 feet to south line and 162 feet to west line, at 2,342-45 feet tested gas through drill stem and looks like big gasser, though no gauge was taken. Cole Petroleum Co.'s No. 36 Benavides, Survey 412, Block 14, located 159 feet to east line and 266 feet to north line, is drilling at 3,800 feet; No. 48 Benavides, Survey 412, Block 5, located 125 feet to north line and 733 feet to east line, is drilling at 1,600 feet.

Dale Field—Caldwell

Sun Oil Co.'s No. 1 Beatty, Nich Kelly Survey, 450 feet to southeast and 150 feet to northeast lines, is drilling at 1,350; No. 2 Tally, W. C. Swearingen Survey, 150 feet to northwest and southwest lines, at 2,190 feet slush pit is covered with oil and casing is being set. The Texas Company's No. 2 Beatty, Nich Kelly Survey, at 150 feet to northeast and southeast lines, has derrick up; No. 3 Beatty, Nich Kelly Survey, 150 feet to southeast and southwest lines, has derrick up; No. 1 Lackey, 150 feet to northeast and northwest lines, has derrick up; No. 2 Lackey, Nich Kelly Survey, 450 feet to northeast and 150 feet to northwest lines, has derrick up; No. 3 Lackey, Nich Kelly Survey, 750 feet to northeast lines and 150 feet to northwest lines, has derrick up. The Texas Company and Humble Oil & Refining Co.'s No. 1 Clingensmith, Squire Damon Survey, 150 feet to southwest lines, and offsetting discovery well, is moving in rig; No. 2 Clingensmith, Squire Damon Survey, 150 feet to southwest lines, has derrick up; No. 3 Clingensmith, Squire Damon Survey, 300 feet southeast of No. 2, is moving in rig. William F. Morgan, Inc., No. 1 Osteen, W. C. Swearingen Survey, 150 feet to northwest and southwest lines, has derrick up and rig moving in; No. 1 O. T. Moore, G. Jasper Gilbert Survey, 150 feet from northwest lines, has derrick up and rig moving in. Weinert and others' No. 1, George W. James Survey, 150 feet from northeast lines, is moving in machinery. Murchison-Roxana's No. 1 Copeland, Nich Kelly Survey, is drilling at 1,300 feet. Wheelock & Collins' No. 1 Beatty, Nich Kelly Survey, is location 150 feet to southeast line of lease; No. 2 Beatty, Nich Kelly is location 300 feet northwest of No. 1; No. 3 Beatty, Nich Kelly Survey, is location 300 feet northwest of No. 2; No. 4 Beatty, Nich Kelly Survey, is location 300 feet northwest of No. 3.

Kingsville Field—Kleberg

Houston Oil Co.'s No. 1 Kissman, Section 41, Block 9, is drilling at 2,140 feet in tough gumbo. Humble Oil & Refining Co.'s No. 2 Sexauer, Section 41, Block 11, at 200 feet to south and 100 feet to east line, is drilling at 1,075 feet; No. B-2 Dennett, Section 38, Block 13, at 150 feet to center south line, at 2,801 feet is plugging back to test at 2,181-2,210 feet; No. 4 Kleberg, Section 40, Block 6,



Cross-section along line A-A shows general relationship of beds and stratigraphic conditions.

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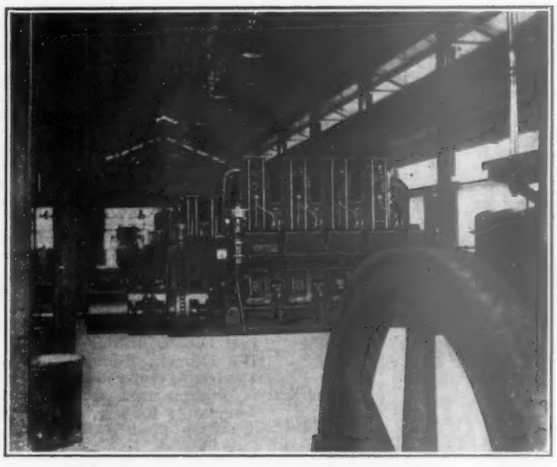

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at 660 feet to east line and 810 feet to south line, is coring at 2,945 feet in pink shale.

Refugio Field—Refugio

Houston Gulf Gas Co.'s No. 6 Shelly, deep test and the only test drilling in the field, is down 2,675 feet. All other tests are shut down waiting outcome of this well.

White Point Area

W. L. Pearson's No. 2 Meaney, 300 feet from south line of tract, is coring at 3,500 feet.

Luling Field—Caldwell

Magnolia Petroleum Co.'s No. 15 Proctor, J. Henry Survey, is location in northeast corner; No. 17 Rios, J. Henry Survey, in the northeast corner, is drilling at 1,851 feet. North & South's No. 1 Kelly is drilling at 7,114 feet; No. 2 Tiller is drilling at 6,615 feet.

SOUTHWEST WILDCATS

(Continued from Page 51)

to east line and 440 feet to north line, is drilling at 2,430 feet. Hamilton and others' No. 1 Holbien, Block 44, at 158 feet to south and 363 feet to west line, is standing at 2,220 feet.

Hidalgo County

Queen City Oil Co.'s No. 1 Adams, Lot 1, Block 82, 3 miles north of Mercedes, has resumed drilling at 2,043 feet.

Starr County

T. W. Foltz and others' No. 1, Survey 301, located 150 feet to northwest lines and 2,400 feet to west lines, is ready to spud in. Milham Corp.'s No. 2 Salinas, Porcion 111, is drilling at 4,800 feet.

Webb County

O. W. Killam's No. 2 Billings, SE NW Survey 712, located 450 feet to NW cor., is in sticky shale at 2,660 feet.

Zapata County

E. K. Bateman's No. 2 Vela, Block 44, located 675 feet to northwest lines and 417 feet to northeast lines, is drilling at 3,400 feet.

Bexar County

A. R. Beal, trustee's No. A-1 Ackerman, Survey 133½ is drilling at 865 feet. Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, has been spudded in. Humble Oil & Refining Co.'s No. 2 Yturri, A. Stafford Survey, 2,200 feet to west line and 750 feet to south line, is drilling at 1,200 feet.

Bee County

D. Hewitt's No. 1 G. A. Ray, 1½ miles west of Pettus, shut down at 1,400 feet. Nichols & White's No. 1 Hicks, Block 19, NW cor., is shut down at 1,408 feet. Red Ant Oil & Gas Co.'s No. 1 Perry & Chestnut, B. Q. Hadley Survey, 450 feet to east line and 1,600 feet to south line of farm, shut down to clear titles after spudding in 20 feet.

Caldwell County

Calco Petroleum Co.'s No. 2 Thomas, 600 feet southeast of the No. 1, deepening from 1,644 feet to Austin chalk. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, at 2,987 feet. Ratcliffe No. 1 J. L. New (formerly Sutton & Smith's), James Hindes Survey, 150 feet to west line and 600 feet to south line, drilling at 2,300 feet. Sutton & Smith's No. 1 Carter, G. Hindes Survey, 150 feet CWL, may deepen from 2,597 feet No. 2 Carter is location 300 feet east of No. 1.

DeWitt County

J. W. Allen's No. 1 Roeder is location 12 miles west of Yorktown. Collet Oil Co.'s No. 1 Boldt, James Lasater Survey, 3,129 feet to east line and 800 feet to south line, is rigged up. Empire Southern Oil Co.'s No. 2 Smith, Survey 3, located three-quarters of a mile west of No. 1, at 2,800 feet, has 125 feet of shale and sand showing gas and is setting casing to test. McNeil & Matthews' No. 1 Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is coring at 3,939 feet. Williams & Gates No. 1 Gohmert, G. W. Brooks league, 175 feet to north line and 300 feet to east line, is shut down at 760 feet to repair water well.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, at 700 feet to north and 2,000 feet to east line, is drilling at 3,270 feet.

Fayette County

Magnolia Petroleum Co.'s No. 1 Fordtran, J. R. Jones Survey, 200 feet to northeast line and 1,050 feet to west line, is drilling at 3,290 feet.

Goliad County

Houston Oil Co.'s No. 1 J. F. Lott, G. Cortinas Survey, 2,000 feet to north and 300 feet to west line, is testing at 2,902 feet; No. 4 R. L. Pettus, P. Trevino Survey, 1,200 feet southwest of No. 2 (No. 2 is a small gas well) is rigged up. C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 156 feet to north line and 540 feet to west line, is ready to spud in.

Gonzales County

Dunning & Pierce's No. 1 Wilkerson, R. Ward Survey, 150 feet to CNL, is drilling. The Texas Company's No. 2 Plowman, Byrd Lockhart Survey, is drilling at 93 feet.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, is down 1,740 feet.

Karnes County

Maurer & Ellis No. 1 Henke, has set 27 feet of surface casing and has resumed drilling in hard rock. Reynosa Oil Corp.'s No. 2 Butler, Block 43, located 1,000 feet south of No. 1, is deepening from 1,947 feet.

Kerr County

Walker-Van Duyn's No. 1 Leigh, Survey 38, at 500 feet north of the river and 150 feet south of the railroad, total depth 3,000 feet, shot at 1,600 feet with small shot, no result and will shoot again with heavier shot.

Kinney County

Havelin Oil Co.'s No. 1 Weatherby, Section 21, Block 5, is shut down at 4,410 feet. W. A. Stephens and others' No. 1 Jim Clamp, Survey 346, is shut down at 1,070 feet for water with slight show of oil and gas in top of Eagleford.

Lavaca County

M. L. Benedum's No. 1 Russek, J. G. Reynolds Survey, Block 38, at 1,060 feet to west line and 210 feet to south line, is drilling in lime at 2,700 feet.

Lee County

Alberts, Glass & Wills' No. 1 Henderson, William Mock Survey, 3,960 feet to west and 1,350 feet to south line, is drilling at 1,100 feet in hard formation.

Live Oak County

Henderson Coquat's No. 1 Reagan, 2,640 feet to west line of Reagan estate and 150 feet to south line, total depth 873 feet, at 400 feet drill stem test showed 2,000,000 feet of gas. Delta Oil Co.'s No. 1 McNeil, Jane Curry Survey, 4,000 feet to NE cor., is drilling at 930 feet. Houston Oil Co.'s No. 18 Cartwright, Colchade Survey, 2,404 feet northeast of No. 5, has cemented casing at 2,500 feet; No. 19 Cartwright, W. J. Cannon Survey, 1,500 feet northeast of No. 17, is rigged up; No. 20 Cartwright, M. Trudo Survey, is location in SE cor.; No. 21 Cartwright, Colchado Survey, is location 2,900 feet northeast of No. 18.

Medina County

California-Medina's No. 1 Rothe, Survey 1,012, center, is shut down at 3,270 feet. R. P. O'Brien's No. 1 Nixon, Survey 531, being cleaned by Golden West Oil Co., has tubing all fished out and well is being cleaned, depth 1,007 feet.

Maverick County

Johnstone & Hunt's No. 1 Whipff, 9 miles from Eagle Pass, is still shut down at 1,220 feet. Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center, is drilling at 1,733 feet. Rycade Oil Co.'s No. 1 Chittim, Section 129, Block 7, is still fishing at 5,630 feet; No. 2 Chittim, Section 15, Block 7, is rigged up 350 feet to NE cor.; No. 2 Sullivan is drilling at 4,885 feet and showing gas.

Milam County

Coffield-Hale's No. 2 Stephens, James Reese Survey, is deepening after failing to get sand at usual depth of field. Groneman Brothers' No. 1 King, 4 miles southeast of Rockdale, has resumed drilling at 2,850 feet. Kent-Middleton's No. 1 Wells-Henderson, 1 mile southwest of production, is ready to spud in. Jennings Oil Co.'s No. 1 Batts, Survey 6, located at 2,687 feet to west and 2,062 feet to south line, is drilling at 1,000 feet. W. A. Jones' No. 1 Casparis, located 960 feet southeast of No. 1 Smith, has set casing; No. 2 Smith, offsetting the No. 1 on the east, is drilling. Yegua Oil Co.'s No. 1 Richards, J. H. Smith Survey, west

central, has resumed drilling after shut down.

McMullen County

Nelson & Woods' No. 1 Shiners, Survey 48, Block 74, is standing at 1,750 feet, completing contract, but may deepen. George Pickett's No. 1 Jacob, Survey 7, is standing at 3,030 feet and will deepen, as test had oil showing at that depth.

San Patricio County

J. M. Davis' No. 1 Welhausen & Driscoll, Lot 8, Section 68, has been abandoned dry at 3,020 feet. Houston Oil Co.'s No. 1 Steele, Block 8, at 1,975 feet, tested and showed rock pressure of 600 pounds. Huber & Crawford's No. 1 Mathis, Block 17 Delgavo Survey, is shut down at 2,516 feet. Mission Drilling Co.'s No. 1 Hardwood, SE cor. of tract, is rigged up. National Oil Co.'s No. 1 Sullivan, J. C. McMullen Survey, 500 feet to SW cor., is rigged up. John Sigmund's No. 7 Wallace Robinson at 4,012 feet, which has been fishing for some weeks, bailed a small amount of oil but was unable to reduce water and fishing has been resumed.

Victoria County

Valley Oil Co.'s No. 1 Stoever, Survey 9, located 500 feet to SE cor., is drilling at 718 feet in gumbo.

Wilson County

Thomas and others' No. 1 Aug. Haese, Survey 124, at 300 feet to NE cor., is drilling at 2,338 feet.

Zavala County

J. G. Pundt's No. 1 West, Fuentes Survey, NW cor., is drilling at 396 feet. B. F. Thompson's No. 1 West is shut down at 228 feet for water.

Val Verde County

Crusoe-Williams' No. 1 Holmab, Section 5, Block N, is straightreaming at 2,940 feet. Douglas Oil Co.'s No. 1 Sellers, Section 82, is shut down at 3,010 feet. East Del Rio Oil Co.'s No. 1 Russell, Section 183, is straightreaming at 3,190 feet. Hiawatha Oil Co.'s No. 1 Sellers, Section 1,031, is drilling at 3,430 feet. Independent Operators No. 1 Whitehead, Section 30, Block 4, is drilling at 3,882 feet. Magnolia Petroleum Co.'s No. 1 Whitehead, Survey 81, is drilling at 2,950 feet. O. O. Owens and others' No. 1 Mills, Section 128, Block 1, is shut down at 2,820 feet in black shale.

SECRETARY HOOVER'S VIEWS ON REGULATION

WASHINGTON, D. C., Sept. 5.—Secretary Hoover expressed himself as being in accord with the proposal made by Secretary Work before the American Bar Association at Buffalo for legislation looking to the conservation of the nation's oil supply.

Mr. Hoover, who is a member of the oil conservation board, declared the whole problem was one of conservation and no one wanted to see regulation of the industry in the normal sense that regulation implies.

"Of course," he said, "there has been no agreement as to the constitutional basis of federal legislation affecting petroleum. That seems to be the big question involved at the start."

Mr. Hoover added that the industry was studying the problem itself and that the oil companies seemed to lean toward State legislation.

"The broad general principles involved seem to favor state action," he said, declaring, however, that he could add nothing to what his fellow cabinet member had said regarding the constitutional basis and method involved in possible action by the Federal Government.

VETERAN DRILLER DIES

P. L. Kratzer, 73, an oil driller of Tulsa, Okla., who spent his life in fields of Pennsylvania and Oklahoma, died last week at a Tulsa hospital. Mr. Kratzer spent his early life in Pennsylvania and was associated with the earliest development in fields near Warren, Pa., where he made his home until 1912, when he came to Tulsa.

DECISION FOR STATE IN HUMBLE POOL SUIT

AUSTIN, Tex., Sept. 5.—Through a decision handed down by Judge Calhoun of the Fifty-Third District Court, in the R. L. Blaffer oil land case, the state was enrichened by some $8,000,000 or $10,000,000, most of which will represent oil production in the Harris County Humble oil field since 1904. All the money will go to the permanent school fund.

The suit was instituted for the state by Attorney General W. A. Keeling in 1924 against Blaffer, the Humble Oil & Refining Co. and about 70 other oil companies and individuals, to recover 628 acres in the heart of the Humble oil field on the ground that this land was a "vacancy" and not included in any existing survey.

The court upheld the contentions of the state and announced a judgment in favor of the plaintiffs to the extent of 265.5 acres, all of which contain producing wells. The acreage lies south of the James Strange and Robert Dunman survey on the south side of the San Jacinto River. The other 362.5 acres claimed by the state, but which was not ruled on by Judge Calhoun, has no producing wells.

Final judgment will be entered October 24, it was announced. Notice of appeal to the Third Court of Civil Appeals will then be filed by the defendants. An oral judgment was handed down by Judge Calhoun, as both sides agreed to have the case go to trial without a jury. The case consumed all of one term of court, beginning last March.

Assistant Attorneys General Joe Brown and C. W. Truehart, representing the state, announced that $5,180,929 worth of oil had been produced during the past 23 years on the land awarded the state, exclusive of the one-eighth royalty, which the purported owners have been collecting. To this amount will be added several million dollars in oil produced while the case was in court. The value of the land awarded to the state is $2,000,000 to $3,000,000.

The cost for the development of the land will be deducted from the final judgment. Judge Calhoun said he was not ready to rule on whether "dry holes" should be included in the cost of development.

The judgments also cut out the Adolph Goldman heirs, of Houston, from any part in the holdings, and also W. S. Tomey and J. L. Helm, joint defendants.

Judge Calhoun ruled that G. C. Perkins, claimant of part of the land, properly filed for a state permit in 1916 to develop the fields but held the court had no authority to give Perkins a judgment for any of the oil produced. Perkins still can push his claim to title for the land recovered and mandamus Land Commissioner J. T. Robison to compel the issue of a permit on the land he claims title to, provided the state is upheld by the Supreme Court in its "vacancy" claim.

Among the companies who now have producing wells on the land awarded the state are the Gulf Refining Co., the Louisiana Oil Refining Co., The Texas Company, the Humble Oil & Refining Co., Blaffer & Farrish, the Paraffin Co. and the Republic Production Co. The trial has cost approximately $75,000. Final decision may not be reached till some time next year, it was stated.

W. C. TEAGLE RETURNING

NEW YORK, Sept. 3.—Walter C. Teagle, president of the Standard Oil Co. of New Jersey is expected to leave Europe for the United States September 3, arriving September 10.

NEW JERSEY EMPLOYS 100,000

NEW YORK, Sept. 5.—The Standard Oil Co. of New Jersey now has over 100,000 employes, including wholly and partly owned subsidiaries. It is stated that the new plan of reorganization may involve a slight reduction in the number.

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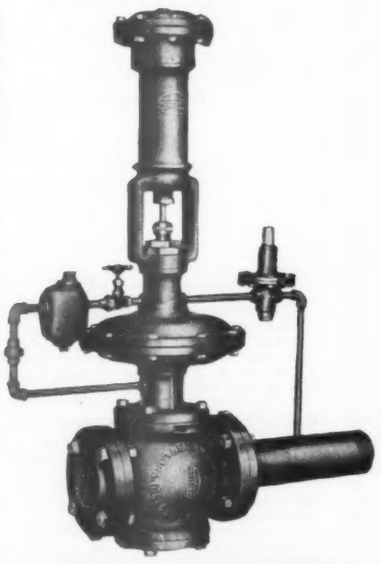

NEILAN COMBINATION BOILER GOVERNOR AND FUEL GAS REGULATOR NO. 87.

When drilling at the fastest rate, or when cementing-off, this Neilan device will maintain all the steam your boilers are capable of generating. It works perfectly with high or low pressure burners and is the only governor that will control the supply of gas to low pressure burners satisfactorily under all load conditions.

NEILAN

COMBINATION BOILER GOVERNOR AND FUEL GAS REGULATOR

It feeds exactly the right amount of gas to the burners for perfect combustion, regardless of fluctuations in the gas pressure.

The operator has absolute control over the governor at all times, and can set it to maintain any desired boiler pressure. No gas regulator is required with this governor.

Complete details sent promptly on request.

NEILAN, SCHUMACHER & CO.

641-651 Santa Fe Avenue, Los Angeles, Calif.

Branch: 307 East Fourth St., Tulsa, Okla. P. H. Wilkinson, Mgr.

Representatives:

Maintenance Engineering Corp., 2000 Harrington Street Houston, Tex.

Pelican Well Tool & Supply Co., Shreveport, La.

"You Can Be Sure of Neilan Products"

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FOR SALE—EQUIPMENT

5 Dean Triplex Pumps, 5 by 8.

1 No. 2, 1 No. 5, 1 No. 6, 2 No. 7, 1 No. 10, 1 No. 11, 1 No. 12 Sweetland Oil Filters.

Two 10-inch S. Roturbo Centrifugal Pumps. Six 10-inch S. Centrifugal Pumps. Steam Turbine.

Storage Tanks. Send for list.

Send us your inquiries.

We buy your surplus equipment.

CONSOLIDATED PRODUCTS CO.
15 Park Row, N. Y. C. Barclay 0603.

SACRIFICE SALE—Curtis 12½-in. motor-driven pipe machine, nearly new $1,000; one combination drill and boring mill 42-in. swing $1,000; one 3-spindle Barnes drill $200; one 1½-in. bolt cutter $150; one 200-lb. power hammer $400; lots of other tools fine order. A. A. Koch, General Delivery, San Angelo, Tex.

FOR SALE

Complete Standard drilling Rig. New Marion Rig Irons, new Boiler new drilling lines, drilling tools and fishing tools, everything needed to drill deep. Located in Western Kansas. Bargain for cash. Address Box C-11, The Oil and Gas Journal, Tulsa, Okla.

STANDARDIZATION NUMBER

On September 22, The Oil and Gas Journal will publish a special issue devoted to "Standardization of Oil Field Equipment." This issue will also feature and be distributed at The International Petroleum Exposition to be held in Tulsa, September 24 to October 1, inclusive.

It is an extremely valuable issue and will be referred to repeatedly by oil men throughout the year.

Be represented at the "Big Show" by mailing your Classified Ad now without fail.

CLASSIFIED WANTS DEPARTMENT
The Oil and Gas Journal.

USED LINE PIPE AND CASING FOR SALE

7—25-h.p. used gas engines.
10—6-in. standard rigs.

15,000 ft. 5⅛-in. used casing.
15,000 ft. 6⅝-in. used casing.
10,000 ft. 8¼-in. used casing.
5,000 ft. 10-in. used casing.

75,000 ft. 3-in. used line pipe.
50,000 ft. 4-in. used line pipe.
20,000 ft. 6-in. used line pipe.
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
607 Holmes Bldg.,
Fort Worth, Tex.

COMPLETE Indiahoma Refinery at East St. Louis being dismantled. Everything for sale. Tanks, 6—55,000 bbl., 2—25,000 bbl., 1—15,000 bbl. and 50 others; 15 miles 4-in, 6-in and 8-in pipe; 7 stills; 9 condensors; 8 boilers; valves from 2 in. to 10 in.; laboratory outfit; 20 steam pumps; 10 Foamite fire engines. Prices low.

HYMAN-MICHAELS CO.,
Railway Exchange Bldg., St. Louis, Mo.

BARGAINS FOR SALE

1—New No. 26 Star drilling machine, with 30 H.P. mounted boiler and complete set of tools.

1—No. 32 Steel Keystone drilling machine with 30 H.P. mounted boiler and complete set of tools.

1—No. 23 Star drilling machine with 25 H.P. boiler and complete set of tools.

1—No. 5½ Steam Keystone tractor drilling machine with complete set of tools.

1—D-Cyclone, gasoline, tractor drilling machine with complete set of tools.

1—No. 30 Special Sparta, gasoline, tractor drilling machine with complete set of tools.

One 1,200 bbl. steel riveted tank, knocked down.

2—Twin 25 H.P. Oil Well Supply Co. Oil engines, with 5x12 Oil Well Supply Co. belt driven Mud Hog pump.

One 5x12 Vogt Bros. steam pump.

One 350 barrel steel riveted agitator

THE TRACY SUPPLY CO., INC.,
Bowling Green, Ky.

FOR SALE—EQUIPMENT

FOR SALE

Eleven 35 H.P. Foos Gas Engines; Two type No. 10 Imperial Ingersoll-Rand Compressors. This equipment in A-1 condition, located at Norphlet, Ark. For full particulars write J. E. Galligan, Skelly Oil Co., Tulsa, Okla., or E. W. Bissett, Skelly Oil Co., El Dorado, Ark.

FOR SALE—Machine Shop located in heart of Mid-Continent field. Completely equipped to handle all kinds of machine work. For full particulars address Box B-990, The Oil and Gas Journal, Tulsa, Okla.

EQUIPMENT WANTED

WANTED—A-1 Standard String of Tools, complete with rig irons. Mail equipment list. Thomas R. Brandt, 2506 Fem, Joplin, Mo.

WANTED—Rotary rig complete, immediately, will buy or lease; must be in A-1 condition. Give full description and location in first letter. Box 411, Odessa, Texas.

MANUFACTURING MACHINISTS

CRAGO CUT GEARS

Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

MACHINE WORK — CASTINGS
Machined to your drawings, Gears, Machinery designed and built.
Modern Facilities—Prompt Service
Reasonable prices. Send for our booklet.
GENERAL ENGINEERING AND MFG. CO., ST. LOUIS, MO.

BUSINESS OPPORTUNITY

SELL YOUR SECURITIES!

Organization in position to market attractive issue not over $1,000,000; wealthy clientele; give details, commissions, first letter; highest references given and required.

SUITE 2005
28 W. 44th St. New York City.

WILL TRADE—all or in lots of $50,000 up; $1,000,000 1st mortgage 6% Gold Bonds Secured by factory bldg., cost over $5,000,000 plus land, located near Cleveland, O., for 1st class producing oil leases. What have you? Please give location, size, age, income, expenses, price, photo of wells and lands, etc. 1432 West 81st St., Cleveland, Ohio.

MAIL YOUR Classified Ads now for the "Standardization Number," out September 22. This issue will be distributed at The 1927 Petroleum Exposition.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

EXPERIENCED Oil Operator, owning standard rig and tools, now engaged in drilling wildcat wells in Texas, wishes to form an association with individual or oil company, capable of assisting in the financing of new wells, on large blocks of acreage, and the purchasing of semi-producing properties; man with legal training preferred; references exchanged. Box B-960, The Oil and Gas Journal.

WILL PAY CASH
NATURAL GAS PROPERTIES
United States or Canada
Must have gross sales not less
One Hundred Thousand Dollars
past twelve Months. Address
P. J. MINCK, 720 S. KENOSHA
Tulsa, Oklahoma

CAPITAL—An experienced dependable broker with following will aid in financing a worth while proposition. B. W. 810 Broad St., Newark, N. J.

OIL MEN—come to our new field in McKinley County, New Mexico. Three known producing sands from 300 to 1,800 feet, good drilling and high gravity oil. If you have the tools we will finance you if desired or give you acreage free to drill the Hospah Structure. Production practically sure in all tests. Box 611, Albuquerque, New Mexico.

BUSINESS OPPORTUNITY

FIVE WELLS made 980 bbls. Experienced operator wishes to form an association with individual or company capable of financing wells in rich shallow field. Box 336, Owensboro, Ky.

I AM INTERESTED in acquiring good block of acreage for drilling providing geology is favorable. Anywhere in Mid-Continent area. Submit in detail to J. N. Vanderpoorten, A. O. U. W. Building, Little Rock, Arkansas.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

POSITION WANTED

MIDDLE aged man, quick, active, good at figures, know contracts, use typewriter, eight years real estate, some oil experience, wants oil job inside or out; do anything; go anywhere; have car; un-married; bank and other references; small salary start. Frank Smith, 709 Austin Ave., Waco, Texas.

TECHNICAL graduate, 7 years well drilling experience, wants position in producing or engineering department of producing company. Permanency and future advancement considered more than salary. Will go anywhere in U. S. Age 29, married, best of references. Box C-15, The Oil and Gas Journal, Tulsa, Okla.

UNIVERSITY graduate with two years' experience in West Texas, desires scouting position. Box C-16, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED—Young man, age 29, with 8½ years' experience with oil companies. Land and lease department and field work in charge of drilling wells in Kansas. Box C-13, The Oil and Gaas Journal, Tulsa, Oklaa.

GAS LIFT and gasoline plant engineer supt. with seven years' generaal oil field experience, desires position anywhere. Salary $300. Box C-12, The Oil and Gas Journal, Tulsa, Okla.

MAIL YOUR Classified Ads now for the "Standardization Number," out September 22. This issue will be distributed at The 1927 Petroleum Exposition.

POSITION WANTED

Sales representative in Mid-Continent Field—have unbroken record of twelve years of successful selling in this industry. References. Box C-5, The Oil and Gas Journal, Tulsa, Okla.

A DESCRIPTION of your used equipment run in these columns will sell it for you at a nice profit.

CHEMICAL ENGINEER, 38, married. Fifteen years experience in all phases of refining practice. Intimate knowledge of details of distillation, acid and clay treating and natural gas work. Specialist cracking, hydrogenation and motor fuel problems. Two years' experience in patent investigations. Full knowledge of inspection and petroleum analytical methods and present-day research; desires new opportunity for service. Locality no consideration. Box C-4, The Oil and Gas Journal, Tulsa, Okla.

EXPERT ACCOUNTANT-AUDITOR. Experienced in banking and corporation; operates Moon-Hopkins, Remington, Elliott-Fisher bookkeeping machines. Capable of responsibility as accountant or manager, anywhere for permanent connection. Familiar with Spanish language. Box B-999, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

WANTED — Blacksmith, tooldresser. Must know how to dress and temper fishtail bits for rotary, wages $7 per day to start, steady work. Address Ed. Phillips, Morland, Kans.

EXPERIENCED MAN as assistant traffic manager of manufacturing plant located in Eastern Pennsylvania. Good opportunity for advancement. Knowledge of southwestern rate structure essential. Address Box C-10, The Oil and Gas Journal, Tulsa, Okla.

SALESMAN

We require a high-grade man with experience selling power-plant specialties. Acquaintance with executives or buyers in industrial field in this territory is necessary. Every industrial and public institution, hotel, office building are prospects. The entire line are proven producers and backed by a Surety Bond, guaranteeing complete satisfaction on each sale. A man with the ability and initiative to sell can secure a permanent, profitable position with 100% co-operation from this company. Thorough training given; exclusive territory. Give complete details; replies confidential.

THE NORTH AMERICAN FIBRE PRODUCTS COMPANY

Cleveland, Ohio

OIL JOURNAL readers, $3,000-$25,000 find our Service effective in making connections. Individual. Confidential. Not Agency. Jacob Penn, Inc., 9 Park Place, New York, N. Y.

REAL CONNECTION FOR MEN WANTING WORK
With large Oil Companies in Foreign Countries. Experience not essential. Write immediately to Transcontinental Registry Service, Box 576, Fort Worth, Texas.

ADDRESSES WANTED

MR. J. C. JACKSON, dear boy, let me know where I can address you. I have something to tell you, please. P. O. Box 1545, Fort. Worth, Texas.

GEOLOGIST

H. L. BALDWIN
Petroleum Geologist
Telephone 74
Fort Stockton, Tex.

PATENT ATTORNEYS

PATENTS—Oil well cases a specialty. Reliable services by an experience practitioner devoting personal attention to each case. References to oil well clients in Tulsa. B. P. Fishburne, Patent Lawyer, 550 McGill Bldg., Washington, D. C.

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

RANCHES AND FARM LANDS

RIO GRANDE VALLEY irrigated farm, 122 acres; improved; 17 miles of El Paso, near school and market. Terms. Mrs W. E. Wheat, Alpine, Texas.

FOR SALE—One of the best small ranch propositions in eastern New Mexico, consisting of about 6,000 acres of deeded land and a large body of leased land at a very cheap rental. The deeded land is well improved as a ranch proposition and there is something like 50 per cent of it good agricultural land. Price $7.50 per acre. M. A. Crum, Friona, Texas.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

WEST TEXAS OIL LEASES
$1 per Acre Up

In Brewster, Hudspeth, Pecos et al Counties on the Trans-Pecos Fault. Ask for maps, information, prices.
L. R. BARTON & Co.
4016 Camp Bowie Blvd., Ft. Worth, Tex.

WANTED OIL LEASES AND ROYALTY

New company just organized; plenty of capital, desires to buy leases, royalties, production, drilling contracts, or will drill proven or semi-proven acreage on percentage basis. State fully what you have in first letter. Address Box C-14, The Oil & Gas Journal, Tulsa, Okla.

ILLIONIS OIL LAND—I have 5,000 acres leased in Coles and Cumberland Counties, will sell or be carried for interest in production. N. E. Doyle, Raymond, Ill.

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It is an extremely valuable issue and will be referred to repeatedly by oil men throughout the year.

Be represented at the "Big Show" by mailing your Classified Ad now without fail.

CLASSIFIED WANTS DEPARTMENT
The Oil and Gas Journal.

2,000 ACRES adjoining Standard Oil's 4,000 barrel well at Walden; will sell all or part or will lease; also have 150 barrel well at Florence on 480 acres. Apt. 10, 325 East 18th Ave., Denver, Colo.

FOR LEASE—25,000 acres in block G-14 and G-15, Brewster County, Texas, $2 per acre for all or part. E. K. D., Box 1099, Wichita, Kans.

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.55	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)
Compute white space at the above rates.

Mail your advertisement to

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

WANTED TO BUY—Production in Mid-Continent area, either in small tracts or in one location, up to 3,000 bbls. settled daily production, if priced right. Address 706-7 A. O. U. W. Building, Little Rock, Arkansas.

GREENWOOD COUNTY, Kansas. Will lease oil and gas rights on my 350-acre farm on Fall River near Eureka. Charles S. Hayes, Owner, Room 1756 Commodore Hotel, New York, N. Y.

COLFAX COUNTY, New Mexico—80 acres oil lease. Close Charles T. Lupton's location Logan. Good showing oil and gas 1,085 ft. awaiting casing. Geological map. Price $4 an acre. O. B. Wall, Box 824, Wichita, Kans.

FOR SALE—Leases, Oil Production, Asphalt, Lime Stone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

LEASES and half royalties, Caddo, Blaine and other counties. Write for complete list. A. E. Baldwin, Anadarko, Okla.

ONE-EIGHTH royalty and fee title, SE 4-24-19-4, Logan County, Okla. Wire offer. B. H. Dooley, Red Lake, Minn.

LEASES—PRODUCTION

OIL LEASE upon 3,200 acres 10 miles north of Ft. Stockton, Pecos County; 2 wells within 3 miles; others near; 25c rental; $6.50 bonus for all or half. Also, joining above, at 50c rental; bonus $4.20. Also 18,440 A. north line Kinney County, 10 yr. paid up lease at $1. Samuel H. Smith, San Antonio, Texas.

NEW MEXICO LEASES

Leases bought and sold any part of state. Inquiries replied to promptly; maps. William U. Tate, Francisan Hotel, Albuquerque, N. Mex.

$1,200 CASH gets the SE¼ of Sec. 25-20-10 Osage County. Gas well offsets North and Bartlesville pool in adjoining quarter section. A. G. McDonald, Sand Springs, Okla.

THE HOSPAH STRUCTURE of McKinley County, New Mexico is proving a Wonder New Field. Three known producing sands ranging from 300 to 1,800 ft. and producing from 10 to 1,000 barrels per day. Practically all the Major companies operating in this State are interested and drilling. We control the Field and to induce others to help develop our holdings, will join you or give acreage free for a limited number of tests, to those who have rigs or can get them. Box 611, Albuquerque, New Mexico.

NEW MEXICO

Genuine opportunity to secure 2,560 acres for a well in the San Juan high gravity field close to production. Fuel and water on the ground. Price $2.50 per acre. Address P. O. Box 1195, Sapulpa, Okla.

LEASES—PRODUCTION

NEW MEXICO oil leases; Lea, Eddy, Chaves, Union, Quay and all other active counties; complete list and map on request. Orcutt-Harris & Co., Colcord Bldg., Oklahoma City, Okla.

SOUTHWEST TEXAS — WINKLER. Loving, Reeves, Ward, Pecos, Culbertson Counties.
Drilling blocks, Leases, Royalties.
Ranches in fee.
H. F. Anthony, Pecos, Tex.

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas

MAIL YOUR Classified Ads now for the "Standardization Number," out September 22. This issue will be distributed at The 1927 Petroleum Exposition.

OIL LEASES and royalties, Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Dallas, Tex.

ROYALTIES—PRODUCTION

ROYALTIES in Valverde, Winkler and Presidio Counties. Send $10 for 1-64 in 40 acres.
W. R. SKEEN
217 E. Harris, San Angelo, Tex.

PRODUCING royalties. Units for the small investor. Write 302 Brown Bldg., Wichita, Kans.

ROYALTIES—Ten-acre blocks. Oil fields, Andrews County and others. Joe Cunningham, Big Springs, Texas.

If—

you could hire a salesman who could work twenty-four hours a day, call on 25,000 prospects every week, always gain an open-minded audience with the "big boss" and present his sales talk clearly and concisely, you would permit him to **name his own salary.**

Classified Ads in The Oil and Gas Journal perform just such a service—and the cost is **only 35 cents a line for the first insertion and 25 cents a line for each additional insertion.**

Let our Classified Wants sell your leases, royalties, production, farm lands and used equipment, as well as aid you to find efficient help or secure a better position.

Mail us your ad today.

The OIL and GAS JOURNAL
PRODUCING REFINING MARKETING
Classified Wants Department

ROYALTIES—PRODUCTION

FOR SALE—Royalty paying 25 per cent. P. O. Box 3263, Tulsa, Okla.

70,000 acres, Culberson County. Owner will entertain offer upon a ten year paid up oil lease. Offer must exceed $1.20. P. O. Box 300, San Antonio, Texas.

J. F. MARION OIL COMPANY
Magnolia Building
Dallas, Texas
Buys and sells Texas Oil Leases and Royalties

MAIL YOUR Classified Ads now for the "Standardization Number," out September 22. This issue will be distributed at The 1927 Petroleum Exposition.

NOTICE

Offering undeveloped and producing royalties, leases and drilling blocks, Brown (Fry Field area), Coleman, Callahan and Shackelford Counties, Texas.
All offerings submitted will be accompanied by geological information.
M. ELDER & COMPANY
Coleman Hotel Bldg., Coleman, Tex.

MONEY RAISING

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 131 E. 13th, Oklahoma City, Okla.

INCORPORATIONS

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co. Wilmington, Del.

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

WANTED

MAIL YOUR Classified Ads now for the "Standardization Number," out September 22. This issue will be distributed at The 1927 Petroleum Exposition.

WANTED
Producing Royalties
Nothing too large or small for consideration, however, will frankly state I am looking for bargains. Submit full details, description and rock-bottom price, together with pipe line runs for at least three months, by letter only to,
ROYALTY BUYER
5th. Floor Insurance Bldg.,
Dallas, Tex.

WANT DRILLING CONTRACT; 4,000 feet, test to start in 8 mo. Offer 15,000 acres on structure South-central Colorado at 50 cents per acre and 3 per cent override. A. O. Maltby, Manitou, Colorado.

WANTED—Leases in Texas and New Mexico, perferably large areas. Require ample time for thorough geological examination, which will be made during next winter. Box B-992, The Oil and Gas Journal, Tulsa, Okla.

DO YOU WANT to better yourself? Every week men are placed in responsible positions at good salaries through ads in this classified section.

WANTED CAPITAL to operate gold, silver, lead property. J. E. Cooper, Cripple Creek, Colo.

WANTED—WET GAS CONTRACTS
We want wet natural gas for casinghead plant. Will start erection immediately. Give volume, gasoline content. Contract Dept., Wm. H. Allen, 1215 Detwiler Bldg., Los Angeles, Calif.

Consumption Bright Spot at Chicago

But Smaller Stocks Are Carried and Dealers Remain Uninterested. Kerosene Firm. Smackover Passing Out of Picture

By J. B. Waldo

CHICAGO, Sept. 3.—The bright spot in the gasoline situation as seen from this market, is the continued large consumption of gasoline. This is proven by the reports of distributors of their gasoline sales during August. Complete figures are not available yet, but preliminary figures and reports for parts of the month show there was a materially larger consumption than for August, 1926. The quantity of gasoline distributed during August last year was so very large that a 10 per cent increase over the country would be a very large quantity of gasoline. This seems to be about the average judging by the early statements of some of the concerns whose stations cover a large part or all of the territory. It would seem that sooner or later the demand must catch up with the available supply. In fact the volume of gasoline in storage at the close of the month was really less in comparison with the established demand, than it has been many times previously. It does not seem that the position of the market is due as much to the stocks on hand as to other factors for these stocks are by comparison rather light than heavy. They would be quickly absorbed should the distributors start to fill their tanks but they show no signs of doing this. On the contrary they are holding back their orders just as much as they ever have done in the history of this market.

A few years ago when the capacity of the refineries was much less than it is today and the quantity of gasoline from each barrel of crude was about one-half, it might have been necessary for the refiner to build up a stock of motor fuel in the months of least demand to be able to meet the requirements of the auto industry during the summer season. A very prominent oil man recently said regarding the oil industry, "You must remember that ours is the only industry in which we have to accumulate a supply during the winter to meet the demand during the summer." Exception was taken to this statement on two grounds that it was not the only industry whose peak production was less than its peak demand necessitating accumulation of supplies during the off season. Secondly, it was stated that given crude enough the refineries could turn out more gasoline in any month than the autos could possibly consume during that month. There are some organizations whose distribution is in excess of their own refined output, who strive to accumulate some gasoline in the spring for their summer sales but there are also many refineries with no or very little distribution as compared with their capacity for refining gasoline and these offset the refineries that need more gasoline than they can get from their stills. This year there has been an excess of crude, and refiners have increased their runs at a time when the conditions seemed to indicate to the independent distributor that his best plan was to carry as small supplies as possible. And there has been nothing during the season to induce that dealer to change his mind and carry larger supplies at his own stations.

Smaller Stocks Carried

Some years ago, a very prominent distributor of men's furnishings pointed out to its customers that it was not necessary for the latter to carry large stocks. The quickness of communications and of delivery made it possible for the retailer to do as large a business as formerly on much smaller stocks of merchandise in store. He could order as he needed the goods and thus reduce his investment and at the same time have a stock of fresh goods at all times. Something of the same in kind, if not in degree, has been taking place in the petroleum industry. The plan has probably come to stay. Some large orders of gasoline placed at bargain prices in the early spring have not proven more profitable buys than if the gasoline had been bought from time to time as needed. One large distributor who bought at 6 cents then has not paid as much for the same grade of gasoline since. His might be an exceptional case but it costs money to carry gasoline in storage even in the owner's tanks. Some year it may happen that the refiners will not be in position to ship so promptly as they have been this season and this may induce the dealer to carry larger supplies at his stations.

The orders received in the spot market last week showed that such was the condition of stocks in dealers' storage. It seemed as if every order was wanted at once. In some cases premiums were paid for cars in transit that were near the city and could be delivered inside of 24 hours. This was the case only with particular buyers who wanted a certain make of gasoline for most of the time there were plenty of cars available. And what was even more annoying to the sellers were the buyers who would seem about ready to place their order and then decide to wait a few days and tell the seller to call them up early next week or something of that sort.

Range of Prices

Of course there has been a large movement of gasoline from the refineries right along on contracts and in addition there are many refiners who have been quoting the jobbing trade directly and this has cut into the sales through this market. One of these has been reported by country buyers of gasoline as offering U. S. Motor gasoline at 6 cents to the trade direct. When asked regarding this the statement was made that the salesmen of the refinery had been instructed to meet all legitimate competition without reference to headquarters. Several offices stated they had lost occasional orders by holding to 6¼ cents; others stated that they had had to meet 6⅛ cents for U. S. Motor gasoline to retain the business. The bulk of the sales booked at 6¼ cents with very few at more than that price except for special reasons. The Labor Day holiday did not have any noticeable influence on the spot demand. Late in the week there was some hurry up business but there did not seem to be much more of this demand than at any time recently. Warmer weather has prevailed since the early part of last week and this would have been of greater benefit to the distributors if it had come in july or August. As it is, the schools will open September 6, and this restricts touring with a great many families. There is much talk of the delights of fall touring but the number able to take advantage of it is very much less than during July and August.

Higher Gravities

The situation in the higher gravities shows no change either as to demand or prices. Some say the demand is a little better, others that they see no difference. Offerings are fairly free and there is no trouble to supply the requirements of dealers at prevailing prices. The natural gasoline market has been firm and prices here are unchanged. Some large buying by southern refiners is reported. Quotations over September for U. S. Motor gasoline have not been common and owing to the uncertainties in the situation, there has been little advance ordering but such prices as have been named have been on the basis of the present market and to indicate a continuance of present conditions so far as supplies from refineries are concerned. The Ohio situation is very bad. Dealers in that state say they can purchase from refiners at differential points at 5½ to 5¾ cents Group 3 basis. Some sales have been reported here to Ohio points on the basis of 6 cents. One large distributor in a northern Ohio city is stated to be securing U. S. Motor gasoline from a Toledo refinery in his own tank cars at a price but slightly above 5½ cents, a considerable part of which is shipped into Michigan where this operator has stations. Meanwhile the Ohio tank wagon and station prices are reduced by the sale of gasoline at bulk plants on the tank wagon price and by the sale of coupon books which in some instances at least are being sold at a discount amounting to 4 cents a gallon. All sorts of reports are being made regarding the intentions of various companies delivering gasoline in that state from refineries located at differential points and it is evident from the activity in building stations that the competition for business is not ceasing nor likely to diminish in the near future. There are other points that are fertile fields for gasoline dumping owing to the curious tangle of freight rates and there is grave danger that the sale of Group 3 products may be further curtailed by the increased sale of motor fuel from refineries which, owing to the operation of freight rates, are enabled to make prices for gasoline delivered that cannot be met by the refiners in the group. Some of these refiners are so located that they can secure their crude from South America or Mexico. In its annual report the Bureau of Mines points out that the reduction in the supply of Mexican crude has been practically made good by imports from South America and the former country has not exhausted its oil resources and will stage a come-back sooner or later.

Kerosene Firm

Kerosene is firm and slightly higher at least to buy. For a good grade there is nothing available under 4 cents at the very lowest. Some untreated kerosene is on the market at 3⅞ cents but who wants that? good oil men ask. The demand is quite general and would be even larger were gasoline higher in cost. As it is some portions of the country report a sale of gasoline for tractor fuel in excess of the use of kerosene for that purpose. At quite a number of points in the territory kerosene is selling at as high a price as gasoline when the tax is rebated and in Springfield, Ill., where a gasoline war has broken out the station and tank wagon price of gasoline is 12 cents including the 2-cent tax while the tank wagon price of kerosene is 12.1 cents. There is some demand for the 42-44 gravity and this is firmly held by refiners who are asking 4⅜ to 4½ cents as their low price even for resale. One or more of the large refiners advanced the kerosene price an eighth of a cent during last week. The trade here looks upon the demand for kerosene at this time as rather due to the general and seasonable filling of tanks than to any special consumption demand.

Distillate Market

The distillate market has been almost featureless but is expected to be more active after this time. The trade here looks for a season of moderate prices and is not stocking up as largely as some years. Quite large supplies were carried over by some distributors and by several refiners. The general market for distillates ranges around 3 to 3¼ cents for spot stuff and the tendency of prices over the season is toward a closer parallel with these prices. Some business was taken on a considerable number of cars to be shipped during the season at from 3⅜ to 3½ cents last week. Special makes are held for higher prices and there are some offerings at less out of North Texas for example. Some refiners are not quoting any price in their contracts or sales for future delivery but are simply asking for the market date of shipment. Some of the larger distributors state they have placed orders for moderate requirements direct with refiners and name cost prices that seem very low. Some of the distillate is run as 35-37 gravity which gives it the gas oil freight rate. Most of the distributors have made some sort of provision to care for their requirements and expect to begin filling their customers' tanks immediately after the Labor Day and this will really begin the season.

Gas Oil Easier

Gas oil is a little easier to buy but no easier to sell is the general summing up of the situation by a number of refiners and wholesale dealers. It seemed impossible to buy any kind of straight run gas oil, light or dark at less than 2½ cents at the refinery but recently sales have been made by several refiners at 2⅜ cents and in at least one case the sale was for 50 cars over September. These may have been exceptional for some still insist that the refinery market for a straight run gas oil is not less than 2½ cents and that it is more liable to advance slightly than to decline. This is for gas oil that will be used by industrial concerns and by gas companies, not for domestic oil burner fuel as it usually has a cold test of 25 to 35 degrees and sometimes higher. The zero oils now command a premium of one-quarter of a cent and if they are light straw one-half cent over the ordinary gas oils. In fact a light straw, zero gas oil 32-36 gravity is worth so nearly the price of a distillate and the latter is so much easier to buy that some orders for the gas oil of this description are being filled with the lower gravities of distillate. There is a theory that the distillate does not make as hot a fire as the gas oil and for that reason largely there is a demand for 28-30 zero gas oil and if it is to be had with a sufficiently low flash it commands as much money as the regular 32-36 gravity. The demand is at least fairly active although the buying is still largely in small lots or in quantities less than that particular buyer would have ordered some time ago. In some cases mail orders for five cars have been considered as possible mistakes and inquiry made of the purchasing agent but not now. They take the small order and are glad to get it, and do not attempt to increase it lest it be cancelled and they get nothing. This has happened. By all accounts from now on there should be a larger demand for gas oil, light or dark. The gas companies who still use gas oil will be consuming larger quantities. The industrial plants will also need oil for heating as well as power and the domestic oil burner will consume large amounts of gas oil. Theoretically at least the trade sees a better market but as yet it is in the offing. The southern demand from the rice growers and the like is over or nearly so and the northern Louisiana product will be available in larger quantities than it was during the summer.

Passing of Smackover

One of the facts of the fuel oil situation is the passing of the Smackover fuel oil. Great quantities formerly came to this market where it was sold at first almost wholly because it was a cheap fuel oil. As the production dwindled the price was maintained in the face of lower prices for refinery fuel oil by the de-

sirability of the oil for certain purposes and particularly for its low cold test. Now very little is available and most buyers are of necessity turning to other oils. One of the large refineries adjacent to this city received some rather large shipments of Smackover crude and it is assumed that the oil went to the lubricating department. Another large buyer of Smackover has just placed an order for 400 cars of refinery fuel oil out of El Dorado. The price is stated to have been not over 80 cents for this good refinery fuel oil while the usual quotation for Smackover today is $1.15 and the buyer is liable to have a deposit of 6 or 7 inches of muck in the bottom of the tank. The easier tendency of the market seems to have been checked and while prices are generally unchanged some of the lowest quotations have been withdrawn. This may be temporary or it may indicate a little stronger market as the season of greater consumption is rapidly approaching. In addition to the beginning of the season of greater industrial activity the time is close at hand when there will be a large daily consumption of fuel oil purely for heating purposes. Even now some of the large buildings are filling their tanks. There does not seem to have been any material increase in the ranks of the users of fuel oil neither does there appear to be any serious defection to coal. The coal strike is still dragging along. Supplies of coal are stated to be as ample as of oil and no one expects to suffer for want of either. The demand is still for small quantities and there is much seeking for the absolutely lowest cost and much shading of prices. Some have sold short and are covering with some difficulty but so far there have been few if any flagrant violations of contracts to deliver, although sometimes the deliveries have been very slow. Premiums are being named for zero oils where the deliveries extend into October. The premium is usually 5 cents a barrel or one-fourth cent a gallon if the oil is a light product.

Lubs Moving Freely

Lubricating oils are moving quite freely and prices are pretty well maintained at least by refiners and compounders. There is a great lot of cheap motor oils being sold to those who desire cheapness rather than quality but the makers of the quality oils state that they have never had so good a business as this season. The industrial demand is quiet. No new export business is reported here but considerable forwarding on orders is keeping stocks at some refineries down to a low or at least a manageable level.

Tank Wagon

The prediction that there would be no change in the general tank wagon price up to Labor Day has been proven correct and it seems equally possible that no changes will be made until after the late summer has gone. It would be simply throwing money away to cut the gasoline price while the season of motoring was still active. During some years, records show that the gasoline sales by large companies have been as good during September as July. There have been no important price cuts made at leading centers but the usual crop of smaller price wars have been on hand and in some cases the rivals for business having gained nothing and lost something by their tactics have quit their fighting and prices have been restored to normal. Gasoline prices in Michigan were advanced 1 cent a gallon September 5 on account of the increase in the tax.

The domestic burner season is now active for the signing up of customers on the dotted line for the coming season. Locally the tank wagon price for furnace oils is unchanged but there is a good deal of gossip regarding the prices and terms made by some of the most active fuel oil dealers. In some parts of the territory the prices have been reduced by local competition. Very generally the distributing trade complains of the small profits in the business but on the face of the cost of products and the announced selling prices there is a very livable profit. The question seems to be to whom have the dealers given their legitimate and possible profit and why?

WEAKNESS CONTINUES IN THE EAST; BAD WEATHER IMPORTANT FACTOR

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Sept. 3.—Weakness continued in the gasoline market on the Atlantic Seaboard during the week. A continuation of extremely bad weather for motoring was an important factor. One marketer estimated normal daily consumption of gasoline on the Atlantic Seaboard at this time of year at around 10,000,000 gallons, and estimated consumption was cut at least 2,000,000 gallons a day by the bad weather, or 20 per cent. With four days out of the past seven cold and rainy, he estimates a total reduction of at least 8,000,000 gallons in consumption in this territory below normal. A bad Sunday or holiday, he says, means a cut of 20 per cent or more in consumption of around 15,000,000 gallons.

It is evident that the oil industry, in its present situation, cannot stand a prolonged period of bad weather over a wide area without worry. Whether due to rain, cold weather or competitive conditions, gasoline certainly showed acute weakness during the past seven days. The Standard Oil Co. of New York announced officially its reduction to 17 cents in the Massachusetts tank wagon market, although it has been known for some time 17 cents has been the average price in that state. Further weakness in gasoline prices has developed in the South Atlantic States, where the Standard Oil Co. of Kentucky made reductions of 2 to 3 cents.

Although the situation in Virginia has cleared up somewhat following the probable exhaustion of the cargo "dumped" at Norfolk recently, there is acute nervousness all along the line, and expectations of further cuts are the rule. There is a feeling that retail prices are too high in view of the low refinery and tank car quotations. Whether this is based on economic facts or otherwise, it is being played upon by marketers who are selling gasoline for from 10 cents to 15 cents a gallon, retail, in many parts of the Atlantic Seaboard, whereas the usual retail price at service stations and garages ranges from 18 to 20 cents.

Eastern refiners are offering U. S. Motor gasoline at refineries in tank car lots at 8¼ cents. This is said to be moving in large quantities at present. There is no indication of improvement in this quotation for several weeks to come. It is difficult for many gasoline consumers who learn of this quotation to understand present retail prices for gasoline, but the leading companies claim their branded gasoline is of considerably higher quality than ordinary U. S. Motor.

Mid-Continent gasoline continues to make its appearance in the Atlantic Coast markets. Several chains of service stations in the East are known to be handling this material exclusively. They are operating chiefly in the smaller inland cities.

Kerosene Unchanged

The kerosene market is fairly quiet. The export demand is improving. However, local refiners are willing to sell all the water while they can for 6½ cents a gallon, f.o.b. refinery, in tank cars. This does not indicate any particular degree of strength. So far as the tank wagon price situation is concerned, usual weakness is evident. The Baltimore tank wagon price continues at 10 cents, due principally to competition among local refiners.

Furnace Oil

If furnace oil does not move at a record pace beginning with the cool weather expected this fall, marketers who have spent thousands of dollars on advertising will be keenly disappointed. There has been a keen drive in force during the past month to put over the idea of home oil burning, and to all accounts it has been successful.

Furnace oil now rules at 10 cents a gallon, delivered, in lots of 500 gallons or over. This oil is described as a low grade of kerosene. A great many burners use this, but some use lower grades of fuel oil. Furnace oil is now slightly lower in price than it was a year ago. It can be obtained for as low as 9 cents in exceptionally large lots. Most consumers, however, are not equipped to carry more than 500 gallons at a time.

Gas Oil

The gas oil market is without feature. Leading refiners are selling it on the basis of 5½ cents a gallon for "28 plus," or unchanged from last week. There does not seem to be any disposition on the part of refiners to want to hold this material, as they do not anticipate any shortage in the near future.

Fuel Oil

Besides supplying the usual brisk demand for Diesel oil, marketers are doing nothing more than reading with interest reports of the inauguration of Diesel locomotives on various eastern railroads, and of growth in consumption on land and sea generally. It is generally agreed there is going to be a steady increase in demand for this product during the next few years, as there has been in the past several years.

Lubricating Oils

Lubricating oil prices are holding firm at levels prevailing last week. Some falling off in the demand for motor oils is reported by jobbers, but not sufficient to affect prices. Marketers, jobbers and refiners of lubricating oils are enjoying comparative freedom from the troubles experienced by gasoline dealers. They are not entirely independent of trouble, however. There is some distress material on the market, especially in the motor oil department. This material is understood to have its origin principally in the Gulf Coast.

Pale and red engine oils are in somewhat better demand. The spindle oil business is dull in some sections but active in others, with trade generally striking a good average. Cylinder oils are only moving moderately. Prices are holding steady all along the line in the absence of acute competition.

Paraffin Wax

Wax is in good demand although prices are not improved. The export and domestic demand for refined is showing steady gains. Crude scale wax is not quite as active but the demand is stated to be satisfactory. Refiners in the Philadelphia district report an especially good export demand. This is one of the all-important factors in the wax situation, and local marketers hope to reduce their topheavy stocks considerably in the event of a continuation of a good foreign demand. Good progress, however, is already being made.

Petrolatum

Dark green petrolatum advanced one-eighth of a cent during the week to 1⅞ cents. All other grades were reported in good demand but unchanged in price.

Export Market

Exporters are optimistic regarding the outlook in view of present low prices and increasing consumption abroad. They are selling kerosene in greater quantities now, due to a revival in the Far East demand. Lubricating oil is moving more briskly into export channels. The movement of paraffin wax is getting better each week. Gasoline is the only product about which exporters are uneasy. They complain that California and Gulf Coast exporters are getting the cream of the business.

Europe is going into the fall with smaller stocks of oil on hand, comparatively speaking, than is the United States, according to exporters. They say this is because weather has been more favorable and industrial activity has been increasing gradually while slowing up somewhat at home.

Local exporters are getting good reports from their foreign subsidiaries as to the outlook for consumption, and these are being backed up in many ins ances by substantial orders. The movement of cased oil to South America is unusually heavy. Especially is this true of gasoline. A big order recently arrived for cased kerosene for China, the first in many weeks. It involved over 1,000,000 gallons. This is considered especially encouraging in view of the fierce competition in that territory being offered by Dutch-Shell interests.

Value of Brand

One reason the New York refiners are holding on to their cased oil trade is that as a rule consumers of oil in countries where cases are required buy by brand name, and they usually cling to the brands they are used to irrespective of prices. As two or three of the companies selling cased goods have been largely instrumental in building up the markets in some countries, they are maintaining their position in these markets despite strong competition.

There has been discussion in Japan as to the possibility of controlling importations with a view to eliminating some of the drastic competition prevalent in recent months. It is too early yet to say whether the idea of a "monopoly" is taking hold there or not.

Bulk gasoline in England has been reduced approximately 2½d. per imperial gallon, according to a recent survey, except in the London zone, where the reduction was 1½d. This cut was put into effect during August.

Lubricating oils and wax featured the export movement from New York during the week ended August 31. There was also a heavy movement of kerosene in cases, amounting to more than 2,500,000 gallons. Shipments of wax included 1,223,640 pounds of refined and 966,525 pounds of crude.

The only bulk shipment consisted of approximately 1,500,000 gallons of lubricating oils and 117,000 gallons of petroleum asphalt.

Principal Exports

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Aug.31	Aug.24	Aug.17
Gasoline:			
Bulk	.....	.....	5,952,911
Cases	590,000	2,637,210	169,500
Kerosene:			
Bulk	235,249	.....	3,506,069
Cases	2,525,980	2,248,860	590,840
Lubricating oil:			
Bulk	1,474,441	.....	1,485,000
Barrels	802,350	871,050	1,389,500
Cases	263,680	163,640	107,560
Lubricating grease:			
Barrels (lbs.)	.....	135,000	.....
Paraffin wax:			
Bags (lbs.)	1,223,640	1,577,180	220,000
Barrels (lbs.)	966,525	875,900	.....
Petroleum asphalt:			
Bulk	117,738	.....	.....
Barrels (tons)	.....	749	.....

The foregoing figures include all shipments of 500 bbls., 1,000 cases, or over.

Tanker Market and Movement

The demand for petroleum tankers for chartering seems to have suffered a severe decline. Not one fixture of importance was reported during the past week, although several scattered deals are known to have occurred. No details are available. The cargo vessel Cape Comorin was chartered to carry 175,000 cases of gasoline and kerosene from the Gulf to Australia, September-October loading, for 30 cents a case.

Despite the dullness in the chartering trade and comparatively low rates, there does not seem to be an unusually large number of vessels idle at present. In fact, there has been a temporary revival in the California-Atlantic oil trade, and in view of this there does not appear to be any grounds for worry as to the demand for oil tank steamers under American registry.

During the week ended August 31, receipts of crude and refined oil by tanker at Atlantic Coast ports aggregated 4,509,000 bbls., a daily average of 644,000 bbls. This compares with a total of 4,872,000 bbls., and a daily average of 696,000 bbls., for the week ended August 24.

The movement from California to the Atlantic continued large, totaling 691,000 bbls., a daily average of 99,000 bbls. Imports of 1,033,000 bbls. averaged 148,000 bbls. a day.

New York and Philadelphia, combined, account for approximately 60 per cent of the receipts of oil at all Atlantic ports.

The following table shows estimated

(Continued on Page 131)

Apparatus for Vacuum Distillation

Develop New Method for Testing Lubricating and Heavy Crude Oils at Low Pressures. Results Accurate

By Martin J. Garvin* and Arch L. Foster†

During the present study of lubricating oils in the San Francisco laboratory of the Bureau of Mines it became desirable to distill oils used in the experimental work at pressures as low as 10 mm., (mercury column) absolute. In the effort to overcome difficulties and eliminate sources of error the apparatus described below was finally developed.

The distilling flask is essentially the Hempel flask used by the Bureau of Mines for the analytical distillation of petroleum.‡ The complete apparatus is shown in Figure 1. As air leakage at connections is an ever present or potential source of difficulty and error in vacuum apparatus, the mouth of the flask is drawn down to one cm. internal diameter which materially simplifies obtaining an air-tight seal at this point. Before reducing the mouth, the spray porting tube permits the introduction of small bits of broken Tonteller (boiling stone) into the charge of oil. After the screen is inserted into the neck of the flask it is conveniently held in place by heating small points on the neck wall with a blast flame and forcing the glass inward with a sharp point. Three or four points so placed at intervals just above and below the upper and lower screens, respectively, will suffice to retain the screen in position.

Even with fresh Tonteller placed in the flask before each distillation there was much trouble from bumping when heavy oils were distilled at 10 mm. Observation showed that the explosive vaporization in the overheated bottom layer of oil was coincident with the fall of the condensed droplet which collected at the discharge end of the side neck and

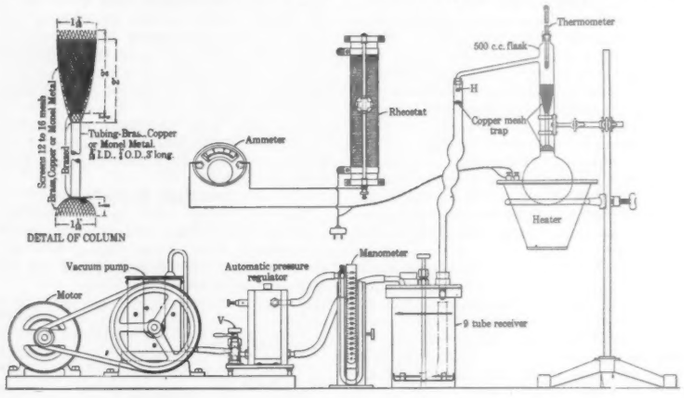

Figure 1—Apparatus for vacuum distillation used by the Bureau of Mines.

screen is inserted and adjusted in position.

This screen is made of copper or brass gauze of 10 to 14 mesh, brazed or silver-soldered to a copper or brass tube of 4 or 5 mm. internal diameter. It is essential that the mesh of this screen be not too close or a column of oil will build up above it and eventually spatter over into the delivery tube and make an accurate distillation impossible. It is also important that the gauze have sufficient strength and rigidity to support the screen against the strains put upon it in charging, cleaning, etc. The supplugged the vapor line until the drop fell of its own weight. This permits a slight building up of pressure in the flask and when the drop falls and opens the line, the sudden release of this increment of pressure permits the vaporization to occur at such a rate as to approach the proportions of an explosion, throwing liquid oil up through the screen and over into the delivery tube, vitiating the results of the determination.

To eliminate this trouble two one-sixteenth inch holes were blown in the end of the delivery tube, one-fourth inch above the lowest extremity, as shown in Figure 1(H); this permits drops to form and fall into the condenser and at the same time prevents the slight fluctuation in pressure within the flask which causes the bumping. Under this arrangement, the distillation proceeds as smoothly as at atmospheric pressure.

Condenser and Receiver

Condenser and receiver are those described in Bureau of Mines Bulletin No. 207, the receiver holding nine graduated test tubes for collecting the various fractions. To increase condenser efficiency a small gauze screen is inserted, convex side up, in the condenser just below the delivery tube; this distributes the hot condensate evenly over the condenser wall, allows it to cool to a lower temperature before it reaches the receiver and decreases or eliminates the volume correction to be applied to the distillate fractions for contraction on cooling in the receiver tube.

The pump used by the writers is a regular Cenco Hy-Vac. Pumps of this general type have ample capacity and if the system is carefully sealed, distillations may be carried out with ease at 1 mm. or lower.

Distillation Procedure

The distillation procedure is as follows: Small pieces of Tonteller are dropped into the flask through the open tube of the screen, the desired quantity of oil is poured into the flask, through a long funnel; a distillation thermometer with tight-fitting cork is adjusted in the mouth of the flask and the delivery tube connected to the condenser by a snug cork. If necessary the joints are luted with litharge-glycerin paste and the pump started. When the pressure has been reduced to the desired degree as indicated by the closed manometer the valve, v, is partly closed and by trial adjusted so that the pressure is constant: the heating is started, the oil brought to distilling temperature very gradually with steadily increasing heat, and the slide wire rheostat so regulated that the oil distills at a rate of three to five cc. per minute. Some manipulation of the control valve, v, is necessary to adjust the pressure after the system is in full operation but once adjusted it requires remarkably little attention to regulate within very narrow limits. Ordinarily the automatic pressure regulator is not used, as manual control of pressure is quite satisfactory. If the regulator is not used it is advisable to have a reservoir of at least one liter capacity in the suction line between valve "v" and receiver to smooth out minor pressure fluctuations.

By this apparatus and method it is a comparatively simple matter to obtain clean-cut distillation, the data on which are accurate, comparable and reproducible. Vapor temperatures, especially, are more reliable and reproducible than with any other method so far attempted.

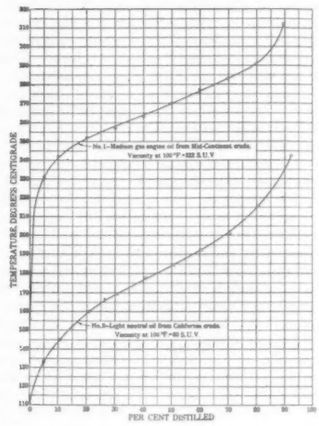
TEMPERATURE DEGREES CENTIGRADE
PER CENT DISTILLED
No. 1—Medium gas engine oil from Mid-Continent crude. Viscosity at 100°F=222 S.U.V.
No. 2—Light neutral oil from California crude. Viscosity at 100°F=60 S.U.V.

Figure 2—Distillation curves for two lubricating oils.

Examples of data obtained, using this apparatus, are shown in Table 1. Nos. 1, 3, 5 and 7 are distillations on medium internal combustion engine oils made from the various crudes as noted, while Nos. 2, 4, 6 and 8 show results on these oils after being used in experimental engine runs in the San Francisco laboratory.

Table 2 also gives distillation results on two oils varying widely in volatility and viscosity, and curves from this data are shown in Figure 2.

*Refinery engineer, Bureau of Mines, Department of Commerce. †Associate petroleum chemist, Bureau of Mines. ‡E. W. Dean and others: Analytical Distillation of Petroleum, Bureau of Mines, Bull. 207, pp. 16-23.

TABLE 2—SHOWING DIFFERENCES IN VOLATILITY AND VISCOSITY BETWEEN TWO NEW OILS

Cut No.	No. 1 Temp. °C.	No. 1 Vol. Distilled c.c.	No. 1 Vol. Distilled per cent	No. 2 Temp. °C.	No. 2 Vol. Distilled c.c.	No. 2 Vol. Distilled per cent
over	156.0	0.0	0.00	111.0	0.0	0.0
½	231.0	12.5	5.00	133.5	12.5	5.0
1	242.0	25.0	10.00	145.0	26.8	10.72
2	252.0	50.0	20.00	160.0	52.2	20.88
3	257.0	75.6	30.02	169.5	77.2	30.88
4	263.0	100.0	40.00	178.0	102.0	40.80
5	270.0	125.0	50.00	184.5	126.8	50.72
6	277.0	149.8	59.98	192.5	151.4	60.56
7	283.0	174.4	69.75	201.0	176.4	70.56
8	291.0	199.2	79.70	215.5	201.4	80.56
9	312.0	223.4	89.40	242.0	230.4	92.16

Reports of Investigations, Bureau of Mines, Department of Commerce.

TABLE 1—SHOWING RESULTS OF VACUUM DISTILLATIONS OF LUBRICATING OILS FROM VARIOUS CRUDES
Medium Internal Combustion Engine Oils From—

Cut No.	Mid-Continent Crude (1) New Vol. c.c.	(1) New Dist. per cent	(1) New Temp. °C.	(2) Used Vol. c.c.	(2) Used Dist. per cent	(2) Used Temp. °C.	Gulf Coastal Crude (3) New Vol. c.c.	(3) New Dist. per cent	(3) New Temp. °C.	(4) Used Vol. c.c.	(4) Used Dist. per cent	(4) Used Temp. °C.
over	0.0	0.0	156.0	0.0	0.0	150.5	0.0	0.0	142.0	0.0	0.0	135.0
—	3.0	1.2	205.0	3.0	1.2	208.5	3.0	1.2	179.0	3.0	1.2	176.0
—	6.0	2.4	220.5	6.0	2.4	224.5	6.0	2.4	186.0	6.0	2.4	188.0
—	9.0	3.6	227.0	9.0	3.6	231.0	9.0	3.6	190.0	9.0	3.6	200.5
1	25.0	10.0	242.0	26.7	10.7	243.8	25.4	10.1	201.5	28.0	11.2	214.0
2	50.0	20.0	252.0	51.6	20.7—	254.0	51.6	20.6	214.5	53.6	21.4	220.5
3	75.6	30.0+	257.0	76.6	30.6	262.2	76.0	30.4	221.5	79.0	31.6	233.5
4	100.0	40.0	263.0	100.9	40.7	268.5	101.2	40.5	228.0	104.4	41.7	242.5
5	125.0	50.0	270.0	125.6	50.3	277.2	126.8	50.7	235.0	129.4	51.8	251.0
6	149.8	60.0	277.0	155.1	62.1	286.0	152.2	60.9	245.0	154.8	61.9	257.5
7	174.4	69.7	283.0	179.5	71.8	293.5	177.4	71.1	252.0	182.2	72.9	265.5
8	199.2	79.6	291.0	202.0	80.9	305.5	204.4	81.8	265.0	207.2	83.0	276.5
9	223.4	89.4	312.0	222.6	89.0	320.5	227.6	91.1	277.0	226.2	90.5	284.0

Cut No.	California Crude (5) New Vol. c.c.	(5) New Dist. per cent	(5) New Temp. °C.	(6) Used Vol. c.c.	(6) Used Dist. per cent	(6) Used Temp. °C.	Pennsylvania Crude (7) New Vol. c.c.	(7) New Dist. per cent	(7) New Temp. °C.	(8) Used Vol. c.c.	(8) Used Dist. per cent	(8) Used Temp. °C.
over	0.0	0.0	162.0	0.0	0.0	152.0	0.0	0.0	210.0	0.0	0.0	160.0
—	3.0	1.2	173.0	3.0	1.2	175.0	3.0	1.2	216.0	3.0	1.2	201.0
—	6.0	2.4	177.0	6.0	2.4	182.0	6.0	2.4	221.0	6.0	2.4	225.0
—	9.0	3.6	180.5	9.0	3.6	185.0	9.0	3.6	224.0	9.0	3.6	228.0
1	25.4	10.1	193.0	25.0	10.0	198.5	25.0	10.0	231.0	25.2	10.1	235.5
2	50.8	20.3	210.0	50.0	20.0	214.0	50.0	20.0	241.0	50.2	20.1	248.0
3	76.0	30.4	220.5	75.0	30.0	226.0	75.0	30.0	248.0	75.0	30.0	254.0
4	101.0	40.4	229.5	105.0	42.0	236.0	99.8	39.9	254.0	100.0	40.0	261.0
5	126.2	50.5	241.0	131.4	52.5	248.0	125.2	40.1	262.0	125.0	50.0	268.0
6	151.4	60.6	252.0	152.0	60.8	254.0	151.6	60.7	271.0	149.4	59.7	276.0
7	178.4	71.4	266.5	174.0	69.6	268.5	176.2	70.5	278.0	174.4	69.7	285.5
8	207.4	83.0	280.5	196.4	78.6	276.5	201.8	80.7	292.0	200.2	80.1	296.5
9	227.8	91.0	295.0	222.4	89.0	296.0	225.8	90.3	311.0	225.0	90.0	314.5

UREN WITH RANNEY

Dr. Lester C. Uren, professor of petroleum engineering at the University of California, has been made Director of Research of the Ranney Oil Mining Co., (Standard Oil Co., of New Jersey). Problems incident to the mining of oil by the Ranney process, particularly sand-permeability and forced drainage, will be studied at the principal laboratory of the company at Bayway, New Jersey. Professor Uren retains his position with the university.

PRAIRIE P. L. SHIPMENTS

Shipments of the Prairie Pipe Line Co. for August totaled 5,786,822.42 bbls., a daily average of 186,671 bbls., as compared to a total of 5,788,133.62 bbls., a daily average of 186,714 bbls. during July.

EAST CONTINUES WEAK, BAD WEATHER FACTOR

(Continued from Page 129)

daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in bbls.):

	Week ended		
	Aug.31	Aug.24	Aug.17
Gulf Coast	398,000	421,000	430,000
Pacific Coast	99,000	120,000	103,000
Mexico	70,000	105,000	88,000
South America	77,000	50,000	78,000
Total	644,000	696,000	699,000

Daily Averages by Months

1927—	Gulf	Pacific	Mexico	S.A.	Total
August	397,000	90,000	80,000	78,000	645,000
July	406,000	83,000	78,000	49,000	616,000
June	378,000	118,000	68,000	47,000	611,000
May	332,000	58,000	91,000	53,000	534,000
April	388,000	93,000	69,000	61,000	611,000
March	345,000	103,000	36,000	81,000	565,000
Feb.	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926—					
Dec.	363,000	57,000	49,000	61,000	530,000
Nov.	335,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	299,000	98,000	63,000	58,000	518,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

ROCKY MOUNTAIN AREA

(Continued from Page 55)

estimated good for 1,500,000 feet. Mid-Continent Oil Co.'s No. 1 Ransom, NE cor. SW, Section 14-29-11, was tested in sand at 880-90 feet and showed 1 bbl. of oil and 11 bbls. of water. Another effort is being made to cement off the water.

Artesia

In the Artesia district in the southeastern part of the state, Flynn, Welch & Yates' No. 50, Section 3-18-28, in the Artesia Pool, was given two shots with 40 quarts at 2,418-38 feet and had an initial production of 30 bbls. after cleaning out. Same company's No. 4 Dunn, NW cor. SE, Section 10-18-28, was dry and abandoned at 2,148 feet. An Eddy County test being closely watched is the Eastland Oil Co.'s No. 1 McClay, SW SE. Section 23-18-27 (Donnelly and others) which topped a sand at 1,650 feet making a show of oil. It had 30,000 feet of gas at 1,180 feet, and is drilling at 1,655 feet. The Cap Rock Oil & Gas Co.'s No. 1 State, SE SW, Section 11-16-32, one of the Lea County tests which had attracted considerable attention, proved to be a failure. It encountered salt water at 4,355 feet and was plugged and abandoned at a total depth of 4,888 feet.

The Texas Production Co. suspended drilling at 4,505 feet in its No. 1 Wilson, Section 29-17-18, on the Dunken Dome in Chaves County, contract having been completed. Contract is being renewed, however, and it will go deeper. This test has had two shows of dry gas. Same company's No. 1 Jackson, SE cor., Section 4-20-34, Lea County, is drilling in salt at 2,050 feet. The salt was topped at 1,530 feet, and the test appears to be running a little higher than any drilled in that sector. Henderson, Dexter & Blair's No. 1 Wyatt, SW SW, Section 34-17-33, Lea County, is shut down. Last depth reported was 5,365 feet.

F. C. Wilson's No. 1 Pace, Section 12-6n-7e, Torrance County, which has been shut down for several weeks at 2,013 feet, is reported showing some gas escaping from bottom of hole. It has not been tested, but is believed to be carbon dioxide. San Juan Coal & Oil Co.'s No. 2 Randall, Section 20-6-10, in Torrance County, is drilling below 4,300 feet. Recently the drill has been in brown limey shale which stands up well.

Montana

Interest in the Bannatyne district in northern Montana has been stimulated by reports that the second well of the Genou Oil & Gas Co. on the structure is materially better than the discovery well. On account of a caving hole, the well has not been given an official test though tubing was installed for this purpose only to be pulled when sand interfered with use of the pump. The well is standing with 900 feet of oil in the hole, which is better than the showing made in the first well prior to pumping. No. 1 has been producing 20 bbls. a day with the pumps going 12 hours out of the 24. A rig will be erected this week on the Fidelity Oil Co.'s location in Section 15-25-1e, and S. C. Ferdig is scheduled to move in two rigs, one on Section 12-25-1, and the other on Section 32-26-1. It is reported several more locations have been made.

On the Pondera structure in the same part of the State, the rig from the discovery well will be moved for use in a test to be drilled by S. C. Ferdig on Section 8-27-4. W. S. Hawley, of the Big Eleven Oil Co., W. M. Fulton, contractor, and Fred Whiteside have made locations for rigs which are scheduled to go up this week. The Pondera discovery well, which has stood idle since title litigation was begun, will be opened to furnish gas for fuel at the other locations in the field.

The California Petroleum Corp. is arranging for the drilling of two test wells on an unnamed structure between Collins and Brady, Mont. The first has been spudded on Section 36-26-2, 3 miles north of the town of Collins. These wells will be carried to the Ellis-Madison contact.

Ralph Arnold, who made the locations for the Pondera and Conrad Butte wells, is arranging to drill on the Bow and Arrow structure in the Sweetgrass Hills between West Butte and Sunburst. Sand is expected at about 2,400 feet.

New Adams Pool

Two wells offsetting the National Oil Co. (Radigan-Hungerford) gusher in the new Adams Pool in the Kevin Sunburst Field were drilled into the lime this week without encountering the heavy flow found in National's No. 1 Adams. National's No. 3 Harte, in Section 7-34-1 and National's No. 3 Adams were both well past the Ellis-Madison contact and also past the producing horizon of No. 1, at the last report, and neither had found any show of oil. The general opinion seems to be that the production in No. 1 came from a fissure which lies out of reach of the drill at the other two locations.

The California Petroleums deep test, No. 15 Lashbaugh, in Section 27-35-2, is reported drilling in the Devonian formation at 2,240 feet. A slight showing of oil has been reported from the Devonian shales which are known to be saturated, but nothing has been found indicative of commercial production.

The Latah, Idaho, well in Section 19-32-1, which aroused interest last week by showing some oil at a location considered strictly gas producing territory, failed to develop oil after a shot and will be saved for a gas well.

Diamond T. Rice's No. 13 Russel, in the Wilcox Pool, has been abandoned, as has also the California Petroleum's No. 1 Dachsteiner in Section 23-34-2 and the Trapp Oil Co.'s No. 2 Morton in Section 13-34-2.

The California Petroleum's No. 14 Moe in Section 28-35-2, Moe-Lorenson Pool, was the best completion of the week, recording 216 bbls. The Hill-O'Neil interests' No. 16 Lorenson in the same section came in a 60-bbl. producer, while the California Co.'s (Standard) No. 13 Lorenson in Section 28 will make a 30-bbl. well. The same company's No. 12, completed last week, was an 80-bbl. well. The Homestake Exploration Co. recently completed three wells on State land in Section 36-35-2, the wells being numbered 35, 36 and 37, respectively, and all small pumpers. The Hill interests No. 6 Halter has been completed and put on the pump. California Petroleum's No. 2 Kalispell-Kevin made a 20-bbl. well, and the same company's No. 5 Kenney is a small pumper. The Big West Oil Co. abandoned its No. 4 Steele in Section 12-34-2, and the Lawson Hanbury Syndicate abandoned a hole in Section 12-34-1.

FIELD RUNS FOR THE WEEK

Salt Creek	30,820
Teapot	1,400
Big Muddy	2,930
Dutton Creek	40
Grass Creek	2,560
Elk Basin	980
Greybull	15
Rock Creek	2,650
Notches	230
Rex Lake	150
Lance Creek	460
La Barge	450
Poison Spider	1,050
Osage	290
Hamilton Dome	1,280
Mule Creek	650
Lander	390
Byron	70
Lost Soldier	2,670
Simpson Ridge	110
Ferris	100
Cat Creek	2,110
Lake Basin	240
Kevin Sunburst	11,000
Iles Dome	475
Walden	65
Florence	980
Moffat	1,650
Tow Creek	980
Fort Collins	2,900
Boulder	25
Rangely	100
Hogback	530
Rattlesnake	320
Table Mesa	....
Artesia	1,400
Total	72,080

CANADIAN FIELDS

(Continued from Page 53)

up 2 miles of pipe line in the field and relaying larger line, and laying 3 miles of additional line.

A recent review of developments in the Turner Valley oil field deals with the situation and prospects there as follows:

"Between the Rocky Mountains to the west of Alberta and the plains to the east is a relatively narrow belt of hilly country known as the foothills, on the eastern edge of which lies the Turner Valley oil field. This field is only 35 miles from Calgary, and is easily accessible by automobile.

"It is due, according to Dr. G. S. Hume of the Geological Survey, of Canada, to an arching or upwarping of the stretch into a fold or anticline less than 2 miles wide and several miles long from northwest to southeast. Doctor Hume further states that in the northern part of the field the central part of the arch is eroded, leaving high ridges of hard rocks on the east and west of a central valley. The character of the folding, which is relatively sharp, is easily discernible from the many rock exposures which show strata dipping eastward on the eastern ridge and westward on the western ridge. Sheep River crosses the Turner Valley fold almost at right angles to the strike and affords a good geological section. This section shows that the anticline is not a simple fold, but is downfolded at the crest into a syncline, which, from various wells drilled in it, is now known to be very deep and very sharp.

"Four wells are now producing oil from rocks that are assumed to be late Paleozoic. The shallowest of these wells, Royalite No. 4, is 3,740 feet deep. For over two years Royalite No. 4 has produced daily about 500 bbls. of naphtha of 73 degrees Baume, which is extracted by two Smith separators from a flow of gas of approximately 17,000,000 feet. This production during 1926 amounted to more than half the entire oil production of Canada.

"The other three producing wells, Illinois-Alberta, Vulcan and McLeod No. 2, are all producing naphtha of about the same grade as Royalite No. 4 from the same formation. Dalhousie No. 1 well on the strike of the anticline about a half mile northwest of Royalite No. 4, is now preparing to drill the Paleozoic limestone and dolomite to the productive horizon.

"Besides this deep productive horizon, there are other producing horizons within the lower Cretaceous rocks, and all the production of Turner Valley previous to the drilling of Royalite No. 4 well came from these higher strata. Several wells now being drilled have found considerable quantities of oil of about 55 degrees Baume in these Lower Cretaceous rocks. The most promising flow so far encountered in recent drilling has been reached in the New McDougall-Segur well at slightly less than 2,600 feet.

"Over a limited area, therefore, Turner Valley is now a proven field and it seems likely the extent of the structure will be determined by the extent of the lower productive horizon, as the structure is favorable for at least 8 to 10 miles along the strike of the fold. The Vulcan well, drilled on the central syncline of the main anticlinal fold, reached the Palezoic limestone more than 1,400 feet deeper than Royalite No. 4 well. Since, in an ideal anticline, gas is expected at the crest of the fold with oil under it and water under the oil in order of buoyancy, it is significant that wet gas with no water has been encountered in the Vulcan well.

"Thus, while the limits of production on the flanks of the fold may not have the same level, the success of the Vulcan well is a favorable indication that production may be expected to extend far down the flanks of the fold. Also from the expected arrangement according to specific gravity, crude oil, if such is present in the anticline, will be encountered in wells drilled on the flanks. If crude oil is present in the Turner Valley Field, no well yet drilled has reached the productive zone at sufficient depth to encounter it, and as yet the limits of production on the flanks of the fold have not been determined.

"Not only does Turner Valley offer possiiblities of developing into an oil field in which individual wells may have a large production of high-grade oil, but it also gives much encouragement for drilling on other favorable structures within the foothill belt."

PANHANDLE FIELDS

(Continued from Page 40)

is the most interesting well in the field at present. In semiwildcat territory the well is averaging better than 3,000 bbls. daily from 2,836 feet, steel line measurement, when agitated. Elevation of the well is 3,098 feet making 262 feet above sea level.

The well blew wild for several days making a big volume of gas then started making oil. It started out making around 600 bbls. daily and steadily increased. One day it made 3,800 bbls. It is being agitated. The well makes the southeastern part of the McIlroy Pool look more promising for big production. However, in the pool proper, small wells offset two gushers.

The gas lift is expected to develop another good well in the Sanford area when McMillan Oil Corp.'s No. 1 J. M. Sanford (Pool), Section 82, Block 46, H. & T. C. Survey, is put on production by that method. A type lift designed by J. E. Dunn of the Gibson Oil Co. is to be used. The well had the pay at 3,010-51 feet and swabbed 660 bbls. in six days. It had a showing of water at 3,050-51 feet.

Generally, the air-gas lift has not been an outstanding success in Panhandle. Initially, in some instances, it was beneficial. Several tests recently made proved that pumping was more economical, however, several companies are still using air-gas lift to produce their leases. Skelly Oil Co. is salvaging a $100,000 air-gas lift plant on its Johnson lease in Section 20, Block Y. Tests there proved that it was more economical to produce by pumping, according to reports from the field.

PANHANDLE COMPLETIONS

Gray County

Empire Gas & Fuel Co.'s No. 1 J. M. Saunders, Section 40, Block 3, in the Gulf Saunders area, was shot with 240 quarts at 3,045-3,113 feet and made 92 bbls. initially. Magnolia Petroleum Co.'s No. 1 Saylor, Section 111, Block 3, I. & G. N. Survey, was shot with 90 quarts at 3,095-3,120 feet; total depth 3,225 feet and made 35 bbls. initially.

Hutchinson County

Berryman, Caroway and Kitrell's No. 1 Sanford, Section 83, Block 46, H. & T. C. Survey, Sanford area, was plugged back from 3,102 feet to 3,075 feet and completed as a 70,000,000-foot gas well. Gowland's No. 1 Johnson, Section 22, Block Y, A. & B. Survey, made 40 bbls. initially after a 220-quart shot at 2,766-2,844 feet. Scott Heywood and Phillips' No. 4 Smith made 200 bbls. the first 7 hours after a 200 quart shot at 2,890-3,100 feet. Red Hill Petroleum Co.'s No. 1 Johnson Brothers was completed as a 40,000,000-foot gas well at 2,300-2,635 feet. Swinney and associates' No. 1 Cheatham was temporarily abandoned at 1,700 feet. Prairie Oil & Gas Co.'s No. 31 Johnson Brothers-A, was shot with 40 quarts at 3,011-27 feet and swabbed 20 bbls. initially. Same company's No. 48 Johnson Brothers had the pay at 2,930-61 feet and made 50 bbls. of oil and 10 bbls. of water.

REFINING AND MARKETING

Tennessee Governor Seeks Aid in Fight to Regulate Prices

NASHVILLE, Tenn., Sept. 2.—Governor Peay of Tennessee yesterday sent letters to the governors of all states calling upon the chief executives to intervene in the case now pending in the Federal Courts in which the State had been enjoined from enforcing a state law regulating the price of gasoline.

The letter follows the recent decision of the Federal District Court which held the state law to be unconstitutional. The law which was passed at the last session of the Legislature gave the State authority to regulate the retail price of gasoline in the State. When the State attempted to enforce the statute, oil companies brought action in Federal Court and have secured a permanent injunction restraining the State from enforcing the law.

In his letter, the governor states there are "all kinds of prices in the State." He says these prices are changed without

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VICKERS PETROLEUM BUYS JEWEL OIL CO.

DENVER, Colo., Sept. 3.—The A. A. Vickers Petroleum Co., of Denver, has purchased in its entirety the Jewel Oil Co., of Pueblo, Colo., which operated 24 stations in southern Colorado and northern New Mexico. This gives the Vickers company a total of 62 stations in this territory. The capital stock of the Vickers company was increased from $1,000,000 to $3,000,000, to finance the deal. A further increase to $5,000,000 to finance additional expansion is contemplated.

The Vickers company handles Oklahoma and Wyoming refinery products under long-term contracts and is not in the open market. Ray W. Jewel, president of the Jewel Oil Co., will continue in charge of the operations in the Pueblo district. A. A. Vickers, president of the company, formerly was connected with the Sinclair Oil Co. H. B. Graves is secretary and treasurer, and P. E. O'Brien, vice president.

JOHNSON OFFICES AT OMAHA

The new Omaha, Neb., offices of the Johnson Oil Refining Co. are now located at 1115 City National Bank Building. As previously announced the Omaha office will serve the same territory as was previously served by the Tulsa office with the exception of the State of Oklahoma. That State will be served by the Cleveland, Okla., office where the company's refinery is located. J. Haggenjos, formerly of the Tulsa office, is in charge of the Omaha office.

BUYS VENEZUELA OIL

NEW YORK, Sept. 3.—New England Oil Refining Co. has contracted with Lago Petroleum Co. for a supply of Venezuelan crude for its Fall River refinery. Deliveries commenced August 1, and have continued at the rate of approximately 15,000 bbls. daily since that time. Total amount contracted for is understood to be around 1,000,000 bbls.

SELLS BULK STATION

The Indian Refining Co., has sold its bulk station at Charleston, W. Va., to the Service Oil Co., who in turn sold to the Elk Refining Co., who are the temporary distributors of Havolin motor oils. The service station there was also leased.

GOVERNMENT INVESTIGATION SHOWS GASOLINE IS NOW MORE VOLATILE

By E. C. Lane, D. J. Condit and C. S. Luce.
Bureau of Mines

The motor gasoline that is being marketed in the United States this summer is slightly more volatile than than sold a year ago.

During the past eight years the Bureau of Mines has made semiannual surveys of the gasoline marketed in the United States, the survey just completed being the sixteenth in the series. The cities in which samples have been collected have been chosen as representative of the more important marketing territories as it is obviously impracticable to obtain a sample of every gasoline sold in the entire country.

A summary of the results of the 16 surveys is given in Tables 1 and 2, the "summer" surveys being shown in Table 1, and the "winter" surveys in Table 2. Average figures for each city in which gasoline samples were collected are shown in Table 3. A study of these tables as well as of the individual analysis shows a general tendency toward the marketing of a standardized product. Although this holds for the averages of the country as a whole, there are exceptions in some localities. In Laramie, Wyo., although there has been a decrease in volatility as compared with July, 1926, the samples are nevertheless better than the average for the entire survey. The samples collected in Bartlesville, Okla.,

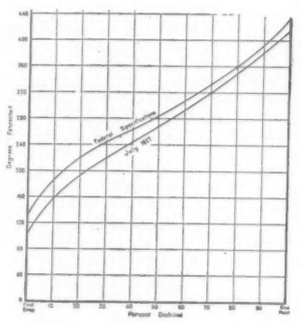

Chart showing relationship between July gasoline and U. S. Motor specification gasoline.

are the poorest as a whole from the standpoint of volatility, of those from any city in this survey.

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TABLE 1—AVERAGE RESULTS OF MOTOR GASOLINE SURVEYS—SUMMER

Survey—	Specific Gravity	A. P. I. Degrees	First Drop	20%	50%	90%	End Point	Av. B. P.	Pct. Rec'vd.
July, 1920	0.749	57.4	130	208	268	388	446	277	96.7
July, 1921	0.747	57.9	125	202	262	377	433	270	96.7
July, 1922	0.752	56.8	121	208	270	375	429	273	96.8
July, 1923	0.751	56.9	125	206	269	382	436	273	96.8
July, 1924	0.751	56.9	107	200	271	390	431	273	96.0
July, 1925	0.754	56.2	108	204	275	387	427	275	96.2
July, 1926	0.750	57.2	100	194	266	382	421	267	96.7
July, 1927	0.748	57.7	102	193	267	381	417	267	96.4
Average	0.750	57.2	115	202	269	383	430	272	96.5

TABLE 2—AVERAGE RESULTS OF MOTOR GASOLINE SURVEYS—WINTER

Survey—	Specific Gravity	A. P. I. Degrees	First Drop	20%	50%	90%	End Point	Av. B. P.	Pct. Rec'vd.
January, 1920	0.748	57.7	119	200	259	369	427	264	96.6
January, 1921	0.744	58.7	113	197	261	377	431	264	95.9
January, 1922	0.745	58.4	102	200	267	377	430	268	96.0
January, 1923	0.744	58.8	107	201	267	375	427	268	96.0
January, 1924	0.748	57.7	96	196	267	383	431	268	96.2
January, 1925	0.746	58.2	95	195	266	382	425	267	96.2
January, 1926	0.747	57.9	93	189	264	380	423	264	96.3
January, 1927	0.748	57.7	92	185	264	383	421	264	96.5
Average	0.746	58.2	102	195	264	378	427	266	96.2

TABLE 3—AVERAGE RESULTS OF MOTOR GASOLINE SURVEY, JULY, 1927

District—	Specific Gravity	A. P. I. Degrees	First Drop	20%	50%	90%	End Point	Av. B. P.	Pct. Rec'vd.
New York City	0.744	58.7	101	195	270	376	416	268	96.6
Washington	0.759	54.9	111	198	258	373	415	264	96.9
Pittsburgh	0.751	56.9	103	191	262	379	418	265	96.4
Chicago	0.743	58.9	98	187	270	387	418	267	96.3
New Orleans	0.745	58.4	104	191	267	380	417	266	96.5
St. Louis	0.744	58.7	102	190	267	382	417	267	96.5
Bartlesville	0.745	58.4	104	197	281	391	426	276	96.2
Denver	0.743	58.9	96	186	262	379	415	263	96.6
Laramie	0.749	57.4	99	193	266	376	409	265	96.7
San Francisco	0.755	55.9	104	198	270	387	419	270	95.7
Average	0.748	57.7	102	193	267	381	417	267	96.4

A complete copy of Serial No. 2827, containing detailed tables of the analyses, can be obtained on request from the Bureau of Mines, Washington, D. C.

SEPTEMBER GASOLINE TANK WAGON AVERAGE AT LOW POINT OF YEAR

Gasoline tank wagon prices declined to a new low during August, as shown by the average price in The Oil and Gas Journal's 50 representative cities on September 1. Beginning in the early part of June, there was a gradual rise in the average price during June and July and better prices seemed assured over the period of high consumption. But price cutting soon appeared in highly competitive areas and during August, the month having the highest consumption ordinarily, these declines wiped out the slight increases made during the two months previous and the month closed with the lowest average since January 1, 1925.

The September 1 average of 14.62 cents is nearly 5 cents below the average on the same date one year ago. The average over 1926 was 18.38 cents. The present price will also lower the average for this year. Over the first six months of 1927 the average was 16.16 cents or 1½ cents higher than the present price, all of which tends to emphasize the lesser earnings of the oil industry and the results of overproduction. The decreased revenue amounts to more than $1,500,000 daily, compared to that based on prices of a year ago.

The majority of the price changes occurred in the East but were restricted there to the New England States, New York, Georgia and Florida. This was caused in part by the dumping of California and Mexican gasoline along the coast and thus flooding the market there.

(Continued on Page 139)

N. P. A. President Organizes Market Company in East

O. P. Keeney has announced his resignation from the Tide Water Oil Co., by whom he has been employed for 16 years. He has formed the Keeney Oil Co., of which he is president, and after a vacation will open his office at 11 Broadway, New York City, about September 10.

Mr. Keeney, in addition to being manager of the wholesale marketing department of the Tide Water Oil Co., was a director of the Tide Water Oil Sales Corp., and president of the Tide Water Oil Co. of Massachusetts. His contacts throughout the industry are wide, both by reason of his position with the Tide Water, and also as president of the National Petroleum Association, director of the National Petroleum Mutual Fire Insurance Co., membership on Committee D-2 of the A. S. T. M., and member of the technical committee of the Advisory Board on Federal Specifications.

His work as manager of the wholesale marketing department of Tide Water made him directly responsible for all sales of all unbranded petroleum products, both in the domestic and foreign markets. He also purchased the finished petroleum products required by the various departments. His connection with the branded products dated from the first efforts of the Tide Water Oil Co. to establish branded products, and continued during the subsequent development of the Tydol and Veedol brands, through the Tide Water Sales Corp., of which he was a director.

Mr. Keeney is planning to do a business along the lines of representing and assisting buyers of petroleum products and representing and advising refiners who do not maintain sales offices in New York.

OIL IS REPRESENTED AT AVIATION DINNER

CHICAGO, Sept. 3.—Allan Jackson, vice president of the Standard Oil Co. of Indiana, represented the oil industry at the dinner held at the Union League Club, Thursday to further the development of air service. Prominent industrial leaders and many connected with the air service attended the meeting.

The dinner was also held to celebrate the beginning of regular airplane and express service between Chicago and points in the Southwest and Middle West. On the first of the month the government air mail service was turned over to contract firms which will operate the planes. Those attending the dinner watched the first plane as it left for Dallas, Tex., carrying two passengers and 552 pounds of express.

COTTON VALLEY PLANT

SHREVEPORT, La., Sept. 5.—Louisiana Oil Refining Corp., of Shreveport, has completed its gasoline plant in the Cotton Valley Field of northern Webster Parish, Louisiana, and started operations the past week. The plant has a capacity of approximately 10,000,000 feet of gas daily and at present is turning out from 3,500 to 4,000 gallons of gasoline daily.

AMARILLO SALES MANAGER

R. G. Cocanower has been appointed sales manager of the Amarillo Refining Co., Inc., with headquarters at Amarillo, Tex. He will be in charge of the tank car and bulk station sales of the company. Mr. Cocanower previously was connected with the Midwest Refining Co. at Denver, Colo., for a period of seven years.

Brief Items for Plant Operators

Approve Important Changes in Natural Gasoline October 1

The action of the specification committee of the Association of Natural Gasoline Manufacturers in raising the gravfrom 90 to 92 A. P. I. and the requirement that all five grades of natural gasoline meet a corrosion test, was formally approved by the board of directors and members of the association during the past week. The changes will become effective October 1.

The new specifications were approved following an investigation of several weeks' duration on the part of the committee. In regard to the Grade C specification it was the unanimous opinion of the committee that the top limit should be advanced to 92 gravity so as to conform in that specification with Grade BB. It was felt that the 90 gravity requirement worked an unnecessary hardship on some manufacturers.

In connection with the corrosion requirement the association has adopted as standard the A. S. T. M. method known as D-130-22T copper strip test. This is similar to the 530.21 corrosion test at 122 degrees Fahrenheit described in Technical Paper 323-A of the Bureau of Mines revised as of March 18, 1924. At the present time it is estimated that 80 per cent of all natural gasoline sold in the Mid-Continent area meets this corrosion requirement. It is required by most domestic buyers and all export purchasers.

It is believed that the fact some natural gasoline is being sold which does not meet the corrosion requirement tends to weaken the entire market structure since the material meeting the corrosion test is generally sold at the same price as corrosion test material. With the adoption of the specification by the association it is expected that a market differential will be recognized in the sale of the two products.

Members of the specification committee are John N. Hall, Oil State Gasoline Co., chairman; A. F. Wood, Chestnut & Smith Corp.; Dr. E. R. Lederer, Texas Pacific Coal & Oil Co.; G. P. Bunn, Phillips Petroleum Co.; J. R. Jarvis, Lone Star Gas Co., and S. B. Crooks, Empire Gasoline Co.

TETRALINE ABSORBENT FOR GASOLINE PLANT

The Sobri Co., Brussels and New York, started recently the erection of a natural gasoline plant in the Panhandle district. The exact location is on the SE cor., Section 21, A. & B. Survey, Johnson-Prairie lease. Arrangements have been made with the Phillips Petroleum Co. which will supply the new plant with low pressure (three-quarter pound) gas containing about .5 gallon per 1,000 feet.

The plant was designed by J. H. Bregeat in Paris, a leading European specialist for the solvent recovery industry. A special absorbent called tetraline (which is the commercial name for tetrahydro-naphtaline) will be used instead of the ordinary absorption oil. Tetraline is said to have a certain chemical affinity towards the hydrocarbons of which natural gasoline is composed. This fact makes it unnecessary to compress the gas for the sole purpose of an efficient absorption. The tetraline process is protected by patents in all industrial countries; in the United States by the United States Patent 1,513,153.

The Panhandle plant will be the first tetraline process plant in this country and will be started with an initial capacity of 5,000 gallons daily. Dr. E. Kroch of the Sobri Co. is supervising the erection.

NEW REFINERY PROCESS

CHATHAM, Ontario, Sept. 3.—Frontenac Oil Refineries, Ltd., which has a refining plant at Montreal has been experimenting with a view to producing gasoline suitable to the latest types of high-compression automobile engines. The company is now planning to install a patented process for producing this type of gasoline. The new gasoline is manufactured from high-grade crude oil, the vapors of which, together with superheated steam, are passed through the catalyst in concerters at high temperature. The claims made for this type of gasoline are that it gives the car more power and mileage, quicker starting and easier running while at the same time it eliminates the "knock" from the engine.

HAVRE, MONT., PLANT

CASPER, Wyo., Sept. 3.—The Milk River Refineries, Inc., is constructing a 750-bbl. plant at Havre, Mont. The plant will be ready for operation by October 1, according to reports here. Three stills will be installed at this time and a fourth is on the ground ready for installation when needed. Tankage and pumps have already been installed at the refinery site, and an office building has been erected.

NEW CRACKING UNITS

The two new Holmes-Manley cracking units of the Utah Oil Refining Co. will start operating this month at the company's Salt Lake City, Utah, refinery. The two units have a capacity of 1,000 bbls. each. The new cracking equipment will replace Burton units which have been in operation at the plant for several years.

Kerosene Carburetion Tests at University Experiment Station

Kerosene carburetion for internal combustion engines has been studied by the engineering experiment station at Purdue University, and the results of the work have been summarized as follows:

1. An engine burning kerosene will operate with a wide range of mixtures.
2. For a considerable range the maximum power developed by an engine is insensitive to mixture strength.
3. Thermal efficiency is very sensitive to changes in mixture ratio.
4. The maximum economy mixture is always leaner than the best power mixture.

The effect of the inlet temperature was clearly seen, and practically determines the leanest mixture to be used. In turn, this influences the power output for a given fuel consumption.

The three curves in Figure 1 show the variation with the air inlet temperature of the leanest mixture with which the engine develops full power, of the mixture giving the maximum brake thermal efficiency and of the mixture which is so lean as to cause irregular firing of the engine. At 250 degrees Fahrenheit all three mixture ratios reach stable values which are not materially affected by further heating of the air. Before it was decided to use an inlet air temperature of 250 degrees for the experiments, the effect of the inlet air temperature on detonation was studied. There was detonation over a part of the mixture strength range with each of the inlet temperatures studied, and the width of the range generally increased with the temperature. From considerations of fuel economy, oil, dilution, detonation, etc., the 250-degree Fahrenheit air temperature was selected.

By reducing the compression pressure from 80 to 72- pound gauge and operating with an air inlet temperature of 250 degrees Fahrenheit, detonation was eliminated except at the two highest torque loads. The addition of 15 c. c. of diethyl selenide to a gallon of the kerosene prevented knocking at full load.

In the tests to determine the effect of engine load on mixture requirements the engine was run at 1000 r. p. m. throughout, the inlet air temperature was held at 250 degrees and the load was regulated by interposing various sized throttling orifices between the carburetor and the engine. For each orifice the mixture ratio was varied over the whole range on which the engine could be operated.

Curves representing the variation of

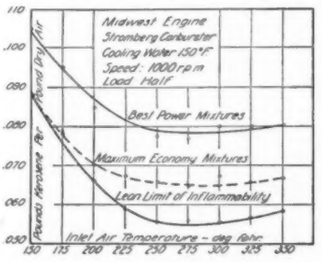


Figure 1.—Effect of inlet air temperatures on the mixture ratios giving maximum power and maximum economy and on the leanest mixture that will ignite.

the best power mixture, the maximum economy mixture and the leanest firing mixture with the indicated horsepower are shown in Figure 2. At fractional loads the carburetor should deliver the mixtures indicated by curve A. The margin between the mixtures defined by this curve and those defined by the limit of leanness curve B is sufficient to assure reliable ignition under all conditions. This maximum economy mixture, however, will produce only about 92 per cent of the maximum horsepower obtainable with a richer mixture. Therefore, if the maximum power is to be developed it becomes necessary to sacrifice economy, and as the throttle approaches the wide open position the mixture should be enriched as suggested by the dashed line connecting curves A and C.

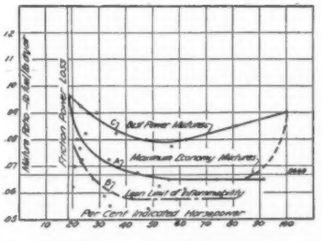


Figure 2.—Effect of indicated load on the mixtures for maximum power and maximum economy and on the leanest mixture that will ignite.

The most desirable mixture for idling is evidently the leanest which will ignite without fail even if the metering characteristics should change slightly. Thus the mixture ratio for idling is governed mainly by the range of inflammability at low load, and a mixture of 0.0925 pounds of kerosene to 1 pound of air is recommended.

As the throttle is opened beyond the idling position it is desirable to supply the engine with a mixture which will enable it to develop its maximum thermal efficiency. As the idling point is

(Continued on Page 140)

AMONG THE TECHNICAL MEN

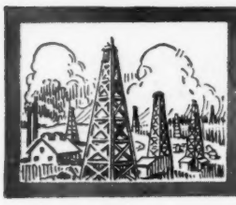
H. W. Bearce

H. W. Bearce, co-chief, division of weights and measures, United States Bureau of Standards, has carried on extensive researches on the density and thermal expansion of liquids. His work on American Petroleum Oils, published as Technologic Paper No. 77, of the Bureau of Standards, served as the basis of the petroleum oil tables accepted as standard by the American Petroleum Institute, American Society for Testing Materials, the United States Bureau of Mines and the United States Bureau of Standards has been widely used in the oil industry.

Mr. Bearce is also active in the standardization work of the American Petroleum Institute, being a member of the gauge committee and of the special committee to consider standardization of cable drilling tool joints. The American Petroleum Institute's Master Reference Gauges are in the custody of the Bureau of Standards.

Mr. Bearce is also secretary of the National Screw Thread Commission, a body authorized by Congress to standardize screw threads, and a member of various sectional committees organized under the procedure of the American Engineering Standards Committee, for the standardization of screw threads and limit gauges.

Mr. Bearce was born at Hebron, Me., October 5, 1881. He was educated in the common schools of Hebron and graduated from Hebron Academy in 1901, and the University of Maine in 1906. He taught physics at the University of Maine for two years after graduating and in July, 1908, he entered the service of the United States Bureau of Standards.



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Sept. 6		Aug. 30		Aug. 23	
OKLAHOMA (Group 3)—						
50-52 450 endpoint (Naphtha)	.06		.06⅛	.06¼	.06¼	
56-58 450 endpoint	.06		.06	.06⅛	.06⅛	
58-60 450 endpoint	.05⅞		.06		.06⅛	.06¼
58-60 437 endpoint (U. S. Motor)	.06	.06¼	.06¼		.06¼	.06½
60-62 400 endpoint	.06¼	.06⅜	.06⅜	.06½	.06⅝	
64-66 375 endpoint	.06½	.06⅝	.06⅝	.06¾	.06¾	.07
68-70 360 endpoint	.06¾	.07	.07	.07⅛	.07⅛	.07⅜
64-66 437 endpoint (blend)	.06	.06¼	.06⅛	.06¼	.06½	
KANSAS—						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06½		.06½	.06¾
NORTH TEXAS—						
56-58 437 endpoint	.05¾	.05⅞	.05⅞	.06	.05⅞	.06
56-60 450 endpoint	.05¾		.05⅞	.06	.05⅞	.06
58-60 437 endpoint (U. S. Motor)	.05⅞	.06	.06	.06⅛	.06⅛	.06¼
60-62 400 endpoint	.06⅛	.06¼	.06¼	.06⅜	.06¼	
64-66 390 endpoint	.06¼	.06⅝	.06½		.06½	
64-66 375 endpoint	.06½		.06⅝		.06½	.06¾
68-70 360 endpoint	.06¾	.07	.07		.06¾	
64-66 437 endpoint (blend)	.05⅞		.06		.06	.06⅛
NORTH LOUISIANA—						
56-58 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06½	.06¾
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06½		.06½	.06⅝
PENNSYLVANIA—						
52-54 Naphtha	.08	.08¼	.08⅛	.08½	.08	.08⅜
54-56 Naphtha	.08¼	.08½	.08½	.08¾	.08½	.08¾
58-60 Gasoline	.08¼	.08½	.08½	.08¾	.08½	.08¾
60 Gasoline	.09	.09¼	.09¼	.09½	.09	.09¼
62 Gasoline	.09⅜	.09⅝	.09⅜	.09⅝	.09¼	.09½
64 Gasoline	.09½	.09¾	.09½	.09¾	.09½	.09¾
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.08¾	.09¼	.09	.09½	.09	.09½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06	.06¼	.06¼		.06¼	.06½
56-58 450 endpoint	.06		.06¼		.06¼	
58-60 437 endpoint (U. S. Motor)	.06	.06¼	.06¼	.06⅜	.06¼	.06½
60-62 400 endpoint	.06¼	.06½	.06½	.06⅝	.06⅝	.06¾
64-66 375 endpoint	.06½	.06¾	.06⅝	.06¾	.06¾	.07⅛
68-70 360 endpoint	.07		.07¼	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.06	.06¼	.06½	.06⅝	.06⅜	.06½

NATURAL GASOLINE

	Sept. 6		Aug. 30		Aug. 23	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.06	.06	.06¼	.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾	.06	.06	.06⅛	.06	.06⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½		.05⅜	.05½	.05⅜	.05½
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.05⅜	.05½	.05⅜	
Grade C, 80-90, 375 e.p., rec. 78%	.05⅜		.05	.05¼	.05	.05¼
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.05⅞	.06	.06⅛	.06	.06⅛
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾		.06		.06	
Grade B, 76-83.9, 375 e.p., rec. 85	.05½		.05⅜	.05½	.05¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.05⅜		.05¼	
Grade C, 80-90, 375 e.p., rec. 78%	.05⅞	.05¼	.05¼		.05	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06		.06		.06	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾		.05¾		.05¾	
Grade C, 80-90, 375 e.p., rec. 78%	.05½	.05¾	.05½	.05¾	.05½	
CALIFORNIA—						
75-85, 375, 390 endpoint	.07½	.09	.08½	.09	.08½	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.06	.06	.06⅛	.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾	.06	.06		.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05½		.05½		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.05½		.05⅜	.05½	.05⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.05¼	.05½	.05	.05¼	.05⅛	.05¼

BURNING OIL

	Sept. 6		Aug. 30		Aug. 23	
KANSAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04⅜	.04½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¼	.04½	.04¼	.04⅜	.04	.04¼
NORTH TEXAS—						
41-43 water white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾
40-42 water white Kerosene	.03½	.03⅝	.03½	.03⅝	.03½	.03¾
ARKANSAS—						
41-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.05⅝	.05⅞	.05⅝	.05⅞	.05½	.05¾
45 Kerosene water white	.05¾	.06	.05¾	.06	.05¾	.06
46 Kerosene water white	.06	.06¼	.06	.06¼	.06	.06¼
47 Kerosene water white	.06½	.06¾	.06½	.06¾	.06½	.06¾
300 Mineral Seal	.06¾	.07	.06¾	.07	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-45 445 endpoint	.08	.08½	.08	.08½	.08	.08½
Engine distillate, 42-44 480 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04⅛
42-44 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04¼	.04½

FUEL OILS

	Sept. 6		Aug. 30		Aug. 23	
KANSAS—						
22-26 Fuel Oil	.87½	.95	.87½	.95	.85	.90
18-22 Fuel Oil	.82½	.85	.82½	.85	.80	.82½
32-36 Gas Oil	.02⅝		.02⅝		.02⅝	
38-40 Distillate	.03⅛	.03¼	.03⅛		.03⅛	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.77½	.80	.77½	.80	.77½	.80
18-22 Fuel Oil	.80		.80		.80	
22-26 Fuel Oil	.82½		.82½		.82½	
24-26 Fuel Oil	.82½	.85	.82½	.85	.82½	.85
26-30 Fuel Oil	.85	.87½	.85	.87½	.85	.87½
28-30 Fuel Oil	.90		.90		.90	
32-36 Gas Oil (dark)	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
32-36 Gas Oil (straw overhead)	.02½	.02¾	.02½	.02¾	.02½	.02⅝
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	
38-40 Straw Distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	.80		.80		.80	
32-36 Gas Oil (straw)	.02¼	.02½	.02¼	.02½	.02⅜	.02½
38-40 Straw Distillate	.03		.03		.03	
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.12½	1.15	1.12½	1.15
32-36 Gas Oil	.03	.03⅛	.03	.03⅛	.03	.03⅛
ARKANSAS—						
36-38 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (straw)	.03¼		.03¼		.03	.03⅛
16-20 Refinery Fuel Oil	1.00	1.05	1.00	1.05	1.00	1.05
GULF COAST (South Texas)—						
Gas Oil	.04		.04		.04	
Fuel Oil	1.60	1.65	1.60	1.65	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.03¾	.04¼	.03¾	.04¼	.03¾	.04¼
36-40 Fuel Oil	.04	.04½	.04	.04½	.04	.04½
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
27-32 Distillate	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
*15-20 Fuel Oil, Bunkers (at tide water)	1.00		.85	1.10	.85	1.00
15-20 Fuel Oil (cargo lots)	.90		.70	.75	.70	.75
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	.85	.87½	.85	.87½	.85	.87½
22-26 Fuel Oil (sellers' cars) Group 3	.82½	.85	.82½	.85	.82½	.85
18-22 (Group 3)	.80	.82½	.80	.82½	.80	.82½
16-20 Smackover	1.10	1.12½	1.10	1.12½	1.10	1.15
32-36 Gas Oil (zero)	.02½	.02¾	.02¾	.02⅝	.02¾	.03
32-36 Gas Oil (industrial)	.02⅝	.02¾	.02⅝	.02¾	.02½	.02⅝
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	
38-40 Straw Distillate	.03¼	.03⅜	.03¼	.03⅜	.03	.03¼

*Bunkers.

LUBRICATING OIL AND WAX

	Sept. 6		Aug. 30		Aug. 23	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06½	.06¾
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06¼	.06½
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08½	.08¾
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08¼	.08¼
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.10	.10¼
180 vis., 4 color, 23-28 cold test	.09½	.09¾	.09½	.09¾	.09¾	.10
180 vis., 5 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09½	.10
200 vis., 3 color, 23-28 cold test	.10	.10½	.10	.10½	.10½	.11
200 vis., 4 color, 23-28 cold test	.10⅛	.10⅝	.10⅛	.10⅝	.10⅝	.10⅞
200 vis., 5 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10½	.10⅝
240 vis., 3 color, 25-30 cold test	.13¾	.14	.13⅜	.14	.14	.14¼
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13½	.13⅜
240 vis., 5 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12½	.13
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15⅜	.16¼
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15¼	.15½
280 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.07	.09	.07	.09	.07	.09
600, steam refined, light green	.05	.06	.06	.06	.05	.06
190-200 vis., @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02⅜	.02⅝	.02⅜	.02⅝	.02⅜	.02½
PENNSYLVANIA—						
34 Neutral	.07½	.08	.07½	.08	.07¼	.07½
34 Sundebloom Neutral	.08¾	.09	.08¾	.09	.08½	.08¾
36 Miners' Neutral	.07½	.07¾	.07½	.07¾	.06¾	.07
150, 3 color	.28	.28½	.28	.28½	.27¾	.28
180, 3 color	.32¼	.32½	.32¼	.32½	.32¼	.32½
200, 3 color	.34	.34½	.34	.34½	.34	.35¼
220, 3 color	.36	.36½	.36	.36½	.36	.36½
600, steam refined	.09¼		.09	.09¼	.08¾	.09
635, steam refined	.09½	.10	.09½	.10	.10¼	.10½
650, steam refined	.11	.11½	.11	.11½	.12	.12¼
660, Pennsylvania flash	.15	.15½	.15	.15½	.17½	.18
600, Pennsylvania flash	.15	.15½	.15	.15½	.17½	.18
*550, E filtered	.17¼	.18	.17¼	.18	.17¼	.18
*600, E filtered	.18¾	.19¼	.18¾	.19½	.18¾	.19½
600, E filtered	.16½	.17	.16½	.17	.17¾	.18
600, D filtered	.25½	.26	.25½	.26	.25	.25½
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.33½	.35½	.33	.35	.33	.35
†122-124 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼
†124-126 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07	.07½	.07	.07½	.07	.07½
No. 3 color, 200 vis., pale oil	.09	.09½	.09	.09½	.09	.09½
No. 3 color, 300 vis., pale oil	.10	.10½	.10	.10½	.10	.10½
No. 3½ color, 500 vis., pale oil	.11½	.12	.11½	.12	.11½	.12
No. 4 color, 750 vis., pale oil	.14½	.15	.14½	.15	.14½	.15
No. 5 to 6 color, 200 vis., red oil	.07¼	.07¾	.07¼	.07¾	.07¼	.07¾
No. 5 to 6 color, 300 vis., red oil	.09	.09½	.09	.09½	.09	.09½
No. 5 to 6 color, 500 vis., red oil	.10	.10½	.10	.10½	.10	.10½
No. 5 to 6 color, 750 vis., red oil	.13	.13½	.13	.13½	.13	.13½
No. 2 color, 200 vis., pale filtered	.12¾	.14	.12¾	.14	.12¾	.14
No. 2 color, 300 vis., pale filtered	.14	.14½	.14	.14½	.14	.14½
No. 2½ color, 500 vis., pale filtered	.15½	.16½	.15½	.16½	.15½	.16½
No. 2½ color, 750 vis., pale filtered	.20	.20½	.20	.20½	.20	.20½
CALIFORNIA—						
130 vis., 2½-3 color	.09	.10	.10½	.11	.10½	.11

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

200 vis., 2½-3 color	.10	.10½	.11	.11½	.11	.11½
300 vis., 3 -3½ color	.10½	.11	.11½	.12	.11½	.12
350 vis., 3½-4 color	.11	.12	.12	.13	.12	.13
400 vis., 3½-4 color	.13	.14	.13	.15½	.13	.15½
Red Neutral:						
200 vis., 4½-5 color	.08½	.09	.09½	.10½	.09½	.10½
300 vis., 5 - 6 color	.09	.09½	.10½	.11	.10½	.11
400 vis., 5 -6 color	.11	.11½	.12	.13½	.12	.13
500 vis., 4½-5 color	.11¼	.12	.13½	.14½	.13½	.14½
500 vis., 5 -6½ color	.11	.11½	.12½	.13½	.12½	.13½
600 vis., 6 plus color	.12	.12½	13½	.14½	.13½	.14½

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Sept. 6	Aug. 30	Aug. 23
Gasoline, U. S. Motor, 58-60 437	.08¼	.08¼	.08¼
Kerosene, water white, 41-43	.06½	.06½	.06½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.65	1.65	1.65
*Fuel Oil, Diesel, 28-30, per bbl.	2.10	2.10	2.10
Gas Oil, 28 plus	.05½	.05½	.05½
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07¼	.07¼	.07¼
285 red Paraffin Oil	.12½	.12½	.12½
250 red Paraffin Oil	.11½	.11½	.11½
225 red Paraffin Oil	.10½	.10½	.10½
200 red Paraffin Oil	.09½	.09½	.09½
Refined Wax:			
120-122 a.m.p., per lb.	.03⅞	.03⅞	.03⅞
125-127 a.m.p., per lb.	.04	.04	.04
130-132 a.m.p., per lb.	.04½	.04½	.04½
135-137 a.m.p., per lb.	.05½	.05½	.05½
Petrolatum, in bbls., carload lots, per lb.:			
Dark green	.01⅞	.01¾	.01¾
Amber	.03¼	.03¼	.03¼
Extra amber	.03¼	.03¼	.03¼
Cream	.05¾	.05¾	.05¾
Lily white	.07¼	.07¼	.07¼
Snow white	.08¼	.08¼	.08¼

*Lighterage 6.5c a bbl. extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Sept. 6	Aug. 30	Aug. 23
Gasoline, U. S. Motor, 58-60 437, in cases	.2440	.2440	.2440
Kerosene, standard white, in cases	.1615	.1615	.1615
Kerosene, water white, in cases	.1715	.1715	.1715
600 steam refined cylinder stock, in bbls.	.17	.17	.17
635 steam refined	.19	.19	.19
650 steam refined	.20	.20	.20
600 Pennsylvania flash	.24	.24	.24
630 Pennsylvania flash	.32	.32	.32
600 Warren E	.26	.26	.26
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.42	.42	.42
Dark 135 Bright Stock	.40	.40	.40

LOS ANGELES EXPORT PRICES

	Sept. 6		Aug. 30		Aug. 23	
Kerosene, water white	.04⅛	.04⅜	.04⅛	.04⅜	.04⅛	.04⅜
U. S. Motor Gasoline, 53-55 437 e.p.	.06	.06¼	.06	.06¼	.06	.06½

CALIFORNIA CRUDE PRICES
***Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)**

Gravity—	Fullerton, Seal Beach, Long Beach, Huntington Beach, Richfield, Rosecrans-Dom'guez, Torrance-Inglewood 1	Whittier, La Habra, Montebello 2	Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills 3	Coyote 4	Santa Fe Springs 5	Coalinga 6	Wheeler Ridge 7	Santa Maria, Ventura, Orcutt, Salt Lake 8
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.86	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 22 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Domingues, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 32 degrees; Lost Hills and Belridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 29 degrees. Posted only by Union Oil Co.

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	Okla., Kans., N. C. Tex., La.-Ark. 1	Smackover, Ark. 2	Stephens, Ark. 3	Gray County (Texas Panhandle) 4	Crane, Upton, Pecos, Crockett Counties (West Texas) 5	Salt Creek, Wyo. 6	Grade B & Light Crude (G. Coast) 7	Somerset, (South Central Texas) 8
Below 24	....	1.00	....	....	....	....	....	....
24 and above	....	1.25	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.60	....	....	....
26 to 26.9	....	....	....	....	.60	....	1.19	....
27 to 27.9	....	....	....	....	.60	....	1.21	....
Below 28	****	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.60	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.60	1.14	1.25	....
30 to 30.9	1.15	....	1.06	.84	.60	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.60	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.60	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.60	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.60	1.24	1.35	1.09
35 to 35.9	1.26	....	....	.94	.60	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.60	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule May 5, making price below 38 gravity $1.05 per barrel, with 2 cents increase per degree higher in gravity, taking 33-33.9 gravity at $1.07 as basis, with a top price of $1.45 for 52 and above. Humble Oil & Refining Co. adopted this schedule on Lytton Springs crude September 1.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 13; Carter Oil Co., The Texas Company, March 14.

North Central Texas—(Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas), Iatan and Panola (Magnolia only), Currie, Nocona, Moran and Corsicana light); Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only); Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—Standard Oil Co. of Louisiana, The Texas Company, Gulf, Atlantic, March 17, Magnolia Petroleum Co. (March 16) posted price of $1 for below 24 degrees and $1.15 for 24 and above. Louisiana Oil Corp., July 6 and Atlantic Oil Producing Co., July 7.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14.

Column 5—Humble Oil & Refining Co., August 23; Kay County Gas Co., Magnolia Petroleum Co., and Gulf Pipe Line Co., August 24.

Column 6—Midwest Refining Co., March 12. All crude over 37 gravity, $1.30 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co., which steps at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

****Prices for crude below 28 gravity; Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.16, March 12; Arkansas, North Louisiana, March 14. Other companies, 2 cents less for each degree with exception of Humble Oil & Refining Co., which pays $1.12 for crude below 28 degrees gravity.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927)	$1.00
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County	$ .75
*Hutchinson County	.75
*Wheeler County	.75
Gray County	See gravity table

*Humble Oil & Refining Co., August 23. Magnolia Petroleum Co., Gulf Pipe Line Co., and Kay County Gas Co., August 24.

WEST TEXAS

*Iatan (same as North Texas).	
Crane-Upton-Crockett	See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.05 for Howard County crude, effective May 21.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17)	$1.00
Bellevue (Feb. 24, 1927)	1.25
Urania (March 16, 1927)	1.00
East El Dorado (March 16)	1.00
Other fields	See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop).

‡Grade A, (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	1.05
†Saratoga, Batson, Dayton (March 14, 1927)	1.20
**Markham (March 14)	1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. **The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5)	$1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (April 15):	
38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
*Thrall	1.75
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19½ cents per cwt. freight.

†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

*2 cents differential per degree above 37.9 gr. to 40 and above at $1.31

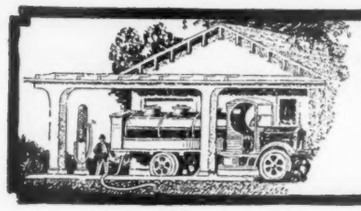
ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	1.25
Mule Creek (May 1)	1.10
Grass Creek, heavy	.90
Grass Creek, light	1.33
Elk Basin (March 12)	1.33
Lance Creek (March 12)	1.33
Poison Spider	1.00
Notches	.65
Rex Lake (February 22)	1.10
Osage	1.33
Lost Soldier (contract)	.95
Greybull-Torchlight	1.33
Hamilton Dome	.85
Cat Creek (Mont.)	1.33
Sunburst (Mont.)	1.35
Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.33

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refin-

(Continued on Page 136)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Sept. 6.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Chicago dist. ..	16.0	18.0	2.0	12.0
Decatur, Ill. ..	16.2	18.2	2.0	12.1
E. St. Louis ...	15.1	17.35	2.0	11.2
Joliet	16.4	18.4	2.0	12.3
Peoria	12.0	12.0	2.0	12.1
Quincy	16.2	18.2	2.0	11.9
Davenport, Ia..	17.5	19.5	3.0	12.3
Des Moines ...	17.0	19.0	3.0	12.3
Keokuk	17.5	19.5	3.0	12.3
Sioux City	17.1	19.1	3.0	11.9
Duluth, Minn ..	15.5	17.5	2.0	12.9
Minneapolis ...	16.0	14.0	2.0	12.9
Mankato	17.1	19.1	2.0	12.7
LaCross, Wis. ..	17.2	19.2	2.0	13.0
Milwaukee	16.1	18.1	2.0	11.9
Madison	16.3	18.3	2.0	12.1
Detroit, Mich. .	17.8	19.8	3.0	12.7
Grand Rapids .	17.7	19.7	3.0	13.6
Saginaw	17.9	19.9	3.0	13.6
Evansville, Ind.	17.0	19.0	3.0	13.0
Ft. Wayne	17.4	19.4	3.0	13.4
Indianapolis ..	17.2	19.2	3.0	13.2
South Bend	17.4	19.4	3.0	13.4
Fargo, N. D. ..	17.0	19.0	2.0	14.9
Huron, S. D. ..	19.5	21.5	4.0	13.9
Sioux Falls ...	15.0	17.0	4.0	13.4
K. C., Mo.	14.9	16.9	3.0	10.6
*Springfield ...	15.8	18.8	3.0	11.5
*St. Louis	15.6	17.9	2.5	11.3
*St. Joseph	16.5	18.5	3.0	11.2
Wichita, Kans..	14.8	16.8	2.0	10.8
Bartlesville, Ok.	15.8	17.8	3.0	10.8

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	16.0	10.75
V. M. & P. naphtha	18.0	12.75
Cleaner's naphtha	18.0	13.75
Stanisol	19.0	14.75

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Tank wagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

Outside the Chicago district, the following quantity discount schedule is in effect on monthly tank wagon deliveries of gasoline: 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. These discounts include the 1 cent allowed on dumps of 50 gallons or more at one delivery.

Within the Chicago district, the following quantity discount schedule is in effect on tank wagon deliveries of gasoline: 750 to 2,000 gallons, one-half cent; 2,000 to 3,000 gallons, three-fourths cent; 3,000 to 6,000 gallons, 1 cent; 6,000 to 10,000 gallons, 1½ cents; 10,000 to 15,000 gallons, 2 cents; 15,000 gallons or more, 3 cents. These discounts are in addition to the special discount of 1 cent on dumps of 100 gallons or more at one delivery.

If the quantity bought during the year is equal to or exceeds 12 times the agreed monthly quantity, the discount is paid or credited on the entire quantity at the close of the term less the monthly payments made during the year.

*State tax 2 cents; remainder city tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
All Ohio points	19.0	21.0	3.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.*

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Dallas, Tex. ..	14.0	17.0	3.0	11.0
Fort Worth ...	14.0	16.0	3.0	10.0
Houston	14.0	17.0	3.0	15.0
San Antonio ..	14.0	16.0	3.0	11.0
El Paso	16.0	18.0	3.0	16.0
Texarkana ...	15.0	18.0	3.0	12.0
Muskogee, Ok.	15.0	18.0	3.0	9.0
Okla. City	15.0	18.0	3.0	9.0
Tulsa	15.0	18.0	3.0	9.0
Ft. Smith, Ark.	16.0	17.0	5.0	12.0
Little Rock ...	18.0	18.0	5.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, one-half cent; over 2,000 gallons, three-quarters cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons a month, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases in the tank wagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
*N. Orleans, La.	15.5	18.5	3.0	14.0
Baton Rouge .	14.0	17.0	3.0	12.5
Alexandria	15.0	18.0	3.0	14.0
LaFayette	15.0	18.0	3.0	13.5
Lake Charles .	14.5	17.0	3.0	12.5
Shreveport	15.5	18.5	3.0	13.0
Kn'xville, T'nn.	19.5	22.5	3.0	15.0
Memphis	15.0	18.0	3.0	14.0
Chattanooga ..	19.5	22.5	3.0	15.0
Nashville	18.0	21.0	3.0	15.0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	18.0	21.0	5.0	12.0

*Tax of 3 cents includes city tax of 1 cent.
*Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Atlanta, Ga.....	16.0	18.0	4.0	15.0
Augusta	19.0	22.0	4.0	16.0
Bacon	19.0	22.0	4.0	16.0
Savannah	16.0	18.0	4.0	14.0
Birm'h'm, Ala.	18.0	21.0	4.0	15.5
Mobile	17.0	20.0	4.0	15.0
Montgomery ..	19.0	22.0	5.0	16.5
Clarks'le, Miss.	17.0	20.0	4.0	12.5
Jackson	17.0	20.0	4.0	13.5
Natchez	16.5	19.5	4.0	14.0
Gulfport	18.5	21.5	6.0	14.0
Vicksburg	16.5	19.5	4.0	14.0
Jack'ville, Fla.	15.0	18.0	5.0	14.0
Miami	17.0	20.0	5.0	15.5
Pensacola	16.0	19.0	5.0	15.0
Tampa	14.0	17.0	5.0	14.0
Lexington, Ky.	18.0	21.0	5.0	15.5
Covington, Ky..	19.0	22.0	5.0	15.5
Louisville	19.0	22.0	5.0	15.0

In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Prices in Georgia include one-half cent inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1 cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Pittsburgh, Pa..	16.0	*22.0	...	14.0
Philadelphia ..	14.0	17.0	...	14.0
Scranton	16.0	*22.0	...	14.0
Allentown	16.0	*22.0	...	14.0
Altoona	16.0	*22.0	...	14.0
Erie	14.0	*18.0	...	14.0
Dover, Del. ...	19.0	22.0	3.0	14.0
Wilmington ...	19.0	22.0	3.0	14.0
Spring'd, Mass.	17.0	17.0	...	15.0
Worchester ...	17.0	17.0	...	15.0
Boston	17.0	17.0	...	15.0
Providence, R.I.	19.0	19.0	2.0	15.0
Hartford, Conn.	21.0	22.0	2.0	15.0
New Haven ..	21.0	22.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Albany, N. Y. .	17.0	19.0	...	15.0
*New York ...	17.0	19.0	...	15.0
Buffalo	17.0	19.0	...	14.0
Rochester	18.0	16.0	...	14.0
Syracuse	17.0	19.0	...	15.0
Boston, Mass. .	17.0	19.0	...	15.0
Augusta, Me. .	20.0	26.0	3.0	15.0
M'nch't'r, N.H.	17.0	21.0	2.0	15.0
Burlington, Vt.	19.0	21.9	2.0	15.0

*Price in steel barrels.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
San Francisco .	17.0	21.0	3.0	15.5
Pueblo	18.0	18.0	3.0	15.5
Los Angeles ..	16.5	20.5	3.0	15.5
Reno, Nev. ...	22.0	26.0	4.0	19.0
Portland, Ore. .	17.5	21.5	3.0	16.5
Seattle, Wash..	16.5	20.5	3.0	16.5
Tacoma	16.5	20.5	3.0	16.5
Spokane	20.5	24.5	3.0	20.5
Phoenix, Ariz..	22.0	26.0	3.0	20.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Atlantic City ..	18.0	....	2.0	14.0
Newark, N. J..	18.0	20.0	2.0	14.0
Annapolis, Md..	20.0	23.0	4.0	12.0
Paltimore	20.0	23.0	4.0	10.0
Cumberland ...	20.0	23.0	4.0	14.0
Washington ...	18.0	21.0	2.0	12.0
Danville, Va. ..	20.5	....	4.5	14.0
Norfolk	20.5	20.5	4.5	12.0
Petersburg	20.5	23.5	4.5	14.0
Roanoke	20.5	23.5	4.5	14.0
Richmond	18.5	21.5	4.5	14.0
Ch'rist'n, W.Va.	20.0	23.0	4.0	14.0
Keyser	20.0	....	4.0	14.0
Parkersburg ..	17.0	20.0	4.0	14.0
Wheeling	20.0	23.0	4.0	14.0
Charlotte, N. C.	20.0	23.0	4.0	14.0
Hickory	20.0	23.0	4.0	14.0
Mt. Airy	20.0	23.0	4.0	14.0
Salisbury	20.0	23.0	4.0	14.0
Charl'stn, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	20.0	5.0	14.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Omaha	14.25	16.25	2.0	12.25
McCook	14.75	14.75	2.0	11.50
Norfolk	16.75	18.75	2.0	12.75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.25	19.25	2.0	13.00

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wag'n	Service station	Incids tax of	Tank wag'n
Denver, Colo. ..	18.0	20.0	2.0	12.5
Pueblo	18.0	20.0	2.0	14.5
Grand Junction	21.5	23.5	2.0	18.0
Casper, Wyo. .	18.0	20.0	3.0	13.0
Cheyenne	19.0	21.0	3.0	14.5
Butte, Mont. ..	22.0	22.0	3.0	19.0
Helena	22.5	24.5	3.0	19.0
Salt Lake, Utah	21.0	23.0	3.5	17.0
Boise, Idaho ..	23.5	25.5	4.0	19.0
Twin Falls	23.5	25.5	4.0	19.0
Albu'que, N. M.	21.0	24.0	5.0	17.0

TANK WAGON CHANGES

August 15.—Standard Oil Co. of Kentucky increased the gasoline tank wagon and station prices 1 cent and 3 cents respectively at Augusta, Ga., making the new prices 19 cents and 22 cents.

August 27.—Standard Oil Co. of Indiana increased the kerosene price 2 cents in Davenport, Iowa, making the new price 11.9 cents.

August 27.—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices 2 cents and 3 cents respectively at Atlanta, Ga., making the new prices 16 cents and 19 cents.

September 5.—Standard Oil Co. of Indiana increased the gasoline tank wagon and station prices 1 cent in Michigan to equalize the increased tax from 2 cents to 3 cents.

September 1.—Magnolia Petroleum Co. reduced the gasoline station price 3 cents at Little Rock, Ark., making the station price the same as the tank wagon price, which is 18 cents.

September 6.—Standard Oil Co. of New Jersey reduced the gasoline tank wagon and station prices 2 cents in Richmond, Va.

CRUDE OIL PRICE CHANGES

September 1.—The Humble Oil & Refining Co. met the Magnolia Petroleum Co.'s schedule of May 5 for Lytton Springs crude. The new price is set at $1.05 per barrel for crude under 33 gravity with a 2-cent increase in price for each degree higher gravity taking 33.0 to 33.9 gravity oil at $1.07 as the basis and making 52 gravity and above $1.45.

A.P.I. GAS COMMITTEE DATE

The gas conservation committee of the American Petroleum Institute of which E. W. Marland is chairman, will meet at Colorado Springs September 12.

MEXICAN REGULATION ADDS MORE HARDSHIP

TAMPICO, Mexico, Sept. 2.—C. C. Freston, general agent of the Mexican Guaranty Co., of Mexico City, which has specialized in furnishing plugging bonds for wells that are drilled in as failures, i. e, whether salt water wells, dry holes, or noncommercial wells, has been advised that from now on it will be required of an applicant for such bond that he deposit in a bank of record 3,000 pecos Mexican gold before such bond can be issued. The usual system, that has been in vogue, was to pay the rate asked for the bond, (the bond was and is 10,000 pesos), the sum of 150 pesos Mexican gold. It will now devolve on companies, seeking to drill, or individual contractors, that they deposit the amount set forth above or not receive a "plugging bond."

This regulation is going to be a hardship for many of the operators. It is not a government regulation, but a no plugging bond means no permit. Without a permit you cannot drill.

PENNSYLVANIA MARKETS

OIL CITY, Pa., Sept. 3.—Gasoline has been a disappointment to Pennsylvania refiners during the past week. Declines in eastern seaboard prices have been reflected in this district and the price of motor fuel is down as a result. The movement of gasoline was reported by the most of the refiners in this district to have been excellent during the week. Kerosene has been good and is in about the same conditions as last week. Neutrals continue to be strong with the demand right up to the supply. Wax improved with better buying and the price is firmer. Fuel oil is in better demand. Bright stocks are still very strong and active. There was an improvement in cylinder stocks in the local refinery district.

CRUDE OIL PRICES

(Continued from Page 135)

ing Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective April 13)

Penna Grade Oil in New York Transit Line (New York)	$2.65
Bradford District Oil in National Transit Lines (Pennsylvania)	2.65
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.55
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.55
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania)	2.50
Penna Grade Oil in Buckeye Pipe Line lines (Ohio) (August 23)	2.25
Cabell Grade Oil in Eureka Pipe Line lines (West Virginia) March 16	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line lines (Kentucky) March 16	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky)	.95
Keister (Pennsylvania)	1.10

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.57
**Saginaw, Mich., Saginaw Sand (May 27)	2.05
Illinois	1.60
Indiana	1.43
Princeton	1.60
Plymouth	1.33
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.33
**Saginaw, Mich., Berea Sand (May 27)	1.95
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16) ..	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (Nov. 18) ..	2.35
§Oil Springs (Canada)	2.18
§Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.
**Posted by Sun Oil Co.

MEXICAN CRUDE

Note—Due to the fact that the exportation of Tuxpam light crude oil has become a negligible factor, prices will no longer be published.

*Panuco heavy (f.o.b. Mex. ports)	$1.15

*17.496c tax.

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Oil Securities Dull Preceding Holiday

Imperial Oil Ascends to New High for All Time. Chairman of Atlantic Refining Co. Comments on Petroleum Situation

There were few moves of importance in the oil stocks during the past week. News of the curtailment of the Little River area south of the Bowlegs Pool in Seminole County, and the report that the Pecos County, Texas, fields would be prorated were received with interest but the vast majority of traders had departed for their week-end vacation which is spread by a holiday this week.

The Barnsdall stock recovered from its loss of last week, and the ground regained placed it around 23½.

Imperial Oil, Ltd.

Strength in Imperial Oil, Ltd., was the feature of oil securities markets during the week. The stock advanced to 54 on a wave of buying. This is a new high price for all time. Several causes were assigned to the advance. One is that the company's business in general has been growing steadily. Another is the discovery of a well in Canada by the company producing several hundred barrels of practically pure gasoline a day. Another is the completion of the second pipe line of its subsidiary, International Petroleum, Ltd., in Colombia, thus practically doubling the supply of crude available for marketing purposes from that source.

Imperial Oil is owned 80 per cent by the Standard Oil Co. of New Jersey. Although the Jersey company is planning a reorganization, it is not expected this will involve any change in Imperial Oil.

Pan American Petroleum

Further weakness in Pan American Petroleum "B" stock dropped that issue to a new low of 45¼. The company's subsidiary, Lago Oil & Transport, now has a potential daily production in Venezuela of 140,000 bbls., the greatest in its history.

Atlantic Refining

The Atlantic Refining Co. and subsidiaries for six months ended June 30, 1927, report net loss of $1,477,419 after interest, depreciation, depletion, taxes, inventory adjustments and intangible development costs. This compares with net income of $3,248,113 or $5.09 a share on 500,000 shares of common stock, after 7 per cent preferred dividends in first half of 1926.

The consolidated income account for six months ended June 30, 1927, compares as follows:

	1927	1926
Gross income	$71,427,156	$75,927,193
Op. expenses, etc.	64,286,357	67,255,273
Net earnings	$ 7,140,799	$ 8,671,920
Other income	950,388	684,508
Total income	$ 8,091,187	$ 9,356,428
Interest	511,033	575,726
Ins. and other res.	418,658	522,986
Intang. devel. costs	1,125,474	.....
Depr., depl., amort.	5,489,535	4,610,803
Invent adj.	1,572,261	.....
Net loss	$ 1,477,419	†$3,248,113
*Pfd. dividends	700,350	700,350
Com. dividends	500,000	.....
Deficit	$ 2,677,769	‡$2,547,763

*Includes minority interests' dividends. †Income. ‡Surplus.

The consolidated balance sheet of Atlantic Refining Co. as of June 30, 1927, compares as follows:

Assets	1927	1926
*Plants and equip.	$65,768,603	$57,963,750
†Lands and leases	4,017,274	3,537,923
‡Perm. invest.	8,513,575	5,969,992
Cash	3,445,488	3,963,306
Accts. receivable	14,149,091	16,782,850
Notes receivable	645,167	1,249,027
Inventories	36,458,369	39,554,416
Mark. sec.	394,663	3,750,814
Due fr. emp.	38,423	.....
Accrued interest	259,102	166,111
Advances	.....	167,721
Def. items	2,317,367	1,933,609
Total	$136,007,112	$135,039,519
Liabilities		
Pfd. stock	$20,000,000	$20,000,000
Common stock	50,000,000	50,000,000
Funded debt	14,558,100	21,244,367
Notes payable	3,003,404	57,500
Accounts payable	6,065,454	6,842,973
Federal taxes	470,259	917,116
Accrued liab.	353,215	453,417
Def. credits	595,174	259,554
Op. res., etc.	9,898,219	5,335,122
Appro. surplus	267,647	265,428
Capital stock sub.	276,400	278,200
Less def. of subs.	118,440	98,115
P. & L. surplus	30,637,680	29,483,957
Total	$136,007,112	$135,039,519

*After depreciation.
†After depletion and amortization.
‡Investments in affiliated and nonaffiliated companies.

Commenting on the semiannual statement, J. W. Van Dyke, chairman, says:

"The outstanding feature is net loss for six months of $1,477,400 after a sizeable writing down of merchandise inventories and all other deductions. This unpleasant exhibition was foreseen and forecast to you at the annual meeting May 3, 1927. A showing of this kind seems inevitable when crude oil and product prices have been declining for any considerable period of time. The company has had corresponding experience at different times in the past, conspicuously the first six months of 1921, when a loss of $8,114,200 was recorded.

"You will note that while a slightly larger volume of business was conducted during the current period than for the one previous, the sales value declined nearly $6,700,000, or an average of 1.31 cents per gallon. At the same time the allocated value of the crude oil as processed was lower by only 0.81 cent, while cost of operations, which, of course, is in no way affected by merchandise values, remained essentially the same. This comparison brings out the interesting fact that even though crude oil may be selling at the wells below the average cost of production, as it probably is at present, it brings no advantage to the refiner, since the pressure of such crude oil upon the market so influences the value of the petroleum products that the refinery's margin for operation is reduced rather than increased. Therefore low crude prices are generally disastrous.

"The redeeming feature of the present situation, so far as your company is concerned, is that its operations are continuous and rather uniform in character and volume. It is purchasing its crude supply from day to day at present low levels and is carrying inventories expressed in gallonage, as distinguashed from dollars, equal to those of earlier and higher-priced periods. Therefore, if and when the price trend reverses itself, losses, real or apparent, which are incidental to inventory levels, may be retrieved."

In conclusion, Mr. Van Dyke said crude production from company's leaseholds is the greatest in the company's experience, averaging 19,968 bbls. daily last week of June, and promises to continue at a relatively high level the balance of the year.

Shreveport-El Dorado Pipe Line

July profit of Shreveport-El Dorado Pipe Line Co., Inc., was $28,918 after interest, rentals, taxes and inventory adjustments but before reserves, comparing with $68,560 in July, 1926. For first seven months this year profit totaled $298,206 before reserves, against $347,346 in corresponding period of previous year.

Dividends

The Borne-Scrymser Co. has declared an extra dividend of 75 cents and regular semiannual dividend of $1, both payable October 15 to stockholders of record September 23.

The Warner-Quinlan Co. has declared the regular quarterly dividends of 50 cents on the common and 1⅝ per cent on the preferred, both payable October 1 to stockholders of record September 15.

N. J. EMPLOYES' STOCK

Employes of the Standard Oil Co. of New Jersey may purchase stock at $35 a share under the company's stock-purchase plan for the second half of 1927. The stock was sold to employes in the first half of the year at $41 a share. Under the employe-ownership plan, the purchase price of the stock is never more than 10 per cent below the average market price of the three months previous to the offering date.

CALIFORNIA MARKETS SHOW LITTLE CHANGE

LOS ANGELES, Calif., Sept. 3.—There has been very little change in the California oil market during the past week. The domestic gasoline situation in and around Los Angeles has strengthened somewhat due to a tendency for the bootleg gasoline prices to line up at about 18½ cents per gallon, including tax. In spite of this improved condition, there have been some rumors circulating that gasoline prices will be reduced next week. The majority of marketers, however, do not look for a downward revision in gasoline prices that soon. Gasoline for local consumption in tank cars is going at around 8¾ to 9 cents in most cases. However, certain of the smaller refiners have made a few sales under this figure.

Natural gasoline is again showing signs of weakening. A few sales have been made at as low as 7½ cents per gallon during the past week. On the whole, however, spot sales of natural gasoline have become very few in number and this market is in better shape than it was a month or two ago. The future outlook is not very good and there is no improvement in price in sight. Fuel oil has been showing a slow, steady improvement and is now being quoted at 90 cents per barrel in cargo lots at tidewater by the larger refiners. Here again, there have been some sales lower, but in almost every case these have been made by smaller refiners who have been forced to move this product.

Lubricating oils are weak. Even during the summer, a time of heaviest consumption, prices have receded. There is a very good reason why this is the case. With the improved methods for refining and larger volume of lubricants manufactured, the cost of manufacture is necessarily reduced. More and more refiners are making lubricating oils, which means that competition for the business has increased greatly with a consequent reduction in price. Lubricating oils are expected to remain soft.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. quot. Sept. 3	Clos. quot. Aug. 29	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	29⅝	30	37⅝	27⅞	32⅞	24⅜	...	...
Atlantic Refining, com.	100	117¼	118½	128⅝	107	128⅜	97	117½	95½
Barnsdall "A"	25	*22⅝	21¼	35½	20¾	32½	23½	33½	18¾
California Petroleum, com.	25	22¼	21¼	32⅞	21½	38⅛	30⅞	34⅜	23⅜
Houston Oil	100	125½	130½	173¼	60½	75	50¼	85	59
Independent Oil & Gas	..	20	20⅛	32⅜	17⅝	34	20¼	41⅜	13½
Louisiana Oil	10	11	11	18⅛	11½	19⅝	12	23⅜	13⅜
Maracaibo	..	15¼	*15	22⅜	15	27⅜	18⅜	35½	20⅜
Marland	..	35⅝	35½	58⅛	31	63⅝	49¼	60⅛	32⅝
Mid-Continent Petroleum	..	31	30¼	39⅝	29	41	25⅝	38	25⅝
National Supply	50	86⅜	84½	95⅜	76	84⅞	65½	71	54¾
Oil Well Supply	25	35	*35½	44⅞	31¼	36	30	38	33⅜
Pan American, B	50	48⅜	46¼	66⅜	45⅛	72⅜	56⅛	83⅞	59½
Pan American, Western B	..	20	20⅜	37⅞	19	46	34	94⅜	37¼
Phillips Petroleum	..	42⅝	42½	60¼	48¼	54⅞	42½	47⅛	36¼
Producers & Refiners	50	*22⅜	22⅝	33⅜	16⅜	26	11	32⅝	12½
Pure Oil, com.	..	26½	25⅞	33½	26	31	25⅜	33⅜	25½
Royal Dutch, N. Y., sh.	13.40	*45¼	45½	54⅜	48½	57⅜	49⅜	57⅜	48¾
Shell Transport	10	42½	*42½	49	43⅝	48⅞	42	49	39⅝
Shell Union, com.	..	26⅝	26½	31⅝	25⅜	30⅞	24	28⅜	21⅝
Simms Petroleum	10	15½	*15	22¾	14½	25⅜	16½	28½	18⅜
Sinclair Consolidated	..	17	16¼	22⅝	16½	24⅞	16⅜	24⅝	17
Skelly Oil	25	25⅞	26	37⅜	24¼	37½	27	32½	21⅜
Standard of California	25	53⅜	53⅜	60⅜	50⅜	63¼	54	67¼	52½
Standard of New Jersey, com.	25	38⅝	38¼	41⅝	35½	46⅞	37½	47¼	38⅜
Standard of New York	25	31¼	31¼	34½	29⅞	47¼	30⅝	48⅝	40
Sun Oil Co.	..	*32	*32	34⅞	30	41⅜	30⅝	43⅜	38½
The Texas Company	25	49¼	49½	58	46	58	48	56	43¾
Texas Pacific Coal & Oil	10	13⅜	13⅝	18⅞	12	19⅛	12⅜	23⅜	11
Tide Water Associated Oil	..	16⅜	16⅝	23½	15½	21	17	...	...
Transcontinental	..	8	8⅛	8⅝	3⅜	5½	3	5⅝	3⅛
Union Oil of California	25	42	42⅝	56½	39⅝	53⅜	37¼	43⅝	33½
Union Tank, com.	100	110¼	*110	115	95	120⅜	84¼	‡134	118
White Eagle Oil & Refining	..	*22½	*22½	37½	22	29⅜	25½	21⅜	25⅝
Standard Oils									
Anglo-American Oil	£1	*18½	18½	21⅝	18⅜	19⅜	16½	26⅜	17½
Borne Scrymser	25	*60	*62	69	49½	75	65	‡240	205
Buckeye Pipe Line	50	*56	*56	58	45	59½	42	72	63½
Chesebrough Manufacturing Co.	25	*108	*108½	107	76½	81¼	63	74	98¼
Continental	10	18½	18	22⅝	16⅜	25⅞	19¼	21½	21⅞
Cumberland Pipe Line	100	87	*88½	‡137	90¼	137	102	156	128
Eureka Pipe Line	100	*55	56½	56¾	47	53⅜	43	96	61¼
Galena Signal, com.	100	8	*7⅜	13½	7½	32½	9⅜	68½	23½
Humble Oil & Refining Co.	25	61⅜	61¼	62⅜	54	99⅜	52	99	42½
Illinois Pipe Line	100	*161¼	161	164⅝	123⅜	144	131	154½	124
Imperial Oil	..	53½	48⅞	54	37⅜	39⅜	32½	39¼	27¼
Indiana Pipe Line	50	*70¼	*70¼	72½	61	68	52¼	84	87½
International Petroleum Co.	10	32	30¼	34⅞	28½	35½	28⅜	25⅜	22⅜
National Transit Co.	12.50	*15¼	*15½	17⅛	13⅝	30⅜	27¼	25½	16½
New York Transit	100	*33⅝	*34	36	31⅛	61½	27¼	70	50
Northern Pipe Line	100	*84	*84½	88	70	80½	64	83	67½
Ohio Oil Co.	25	62½	*61⅛	64¼	52	67⅜	55⅜	75¼	60
Penn-Mex Fuel	25	23	*23	31	12	24¼	15	44	19
Prairie Oil & Gas	25	51⅞	51⅞	55½	45⅝	60¼	48	65½	45⅞
Prairie Pipe Line	100	181¼	181¾	185	132	137½	122½	129¾	105
Solar Refining Co.	100	*182	*181	‡201½	178	212	184½	159	200
South Penn Oil	25	37	*36⅜	36	31½	50	35	‡197	139
Southwest Pa. Line	100	*72	*73	77	55½	56	47½	84	50
Southern Pipe Line	50	*18½	20	‡27¼	24	27	24	‡103	63
Standard of Indiana	25	75½	74⅜	74¼	64¼	70½	60½	70⅜	69¼
Standard of Kansas	25	*16⅝	17	20⅞	15⅜	36½	16½	46	30¼
Standard of Kentucky	25	121⅝	122	122¼	111⅝	134⅜	108	137	114⅜
Standard of Nebraska	25	*44	*44	49½	45	51⅛	42	‡270	231
Standard of Ohio, com.	100	*81	79	‡354	294	362	192½	369	338
Swan & Finch, com.	25	16¼	17½	17	15	21	18	27	12
Vacuum Oil	25	*127⅝	129¼	134	95⅛	109⅜	94½	109½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	91	90½	96½	86¼	95	82½	98¼	63½

*Bid, no sales. ‡Old stock. †New stock.
Quotations furnished by W. J. Wollman & Co.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Sept. 5	60.60	Aug. 1	60.38	June 27	58.99
Aug. 29	60.41	July 25	60.55	June 20	60.46
Aug. 22	61.58	July 18	60.36	June 13	59.91
Aug. 15	61.05	July 11	59.36	June 6	59.27
Aug. 8	61.33	July 2	58.99	May 28	58.68

TANK WAGON AVERAGE AT LOW POINT OF YEAR

(Continued from Page 132)

Cheap water transportation has allowed coastal refiners to compete anywhere along the Pacific or Atlantic Coasts and with the development of natural and artificial waterways, this extension of marketing areas may be carried inland. The development of the St. Lawrence River project may have this effect. Transportation has become a major factor in price setting and has worked to both the advantage and the disadvantage of certain groups of refiners.

The Gulf Coast and California refiners have taken advantage of water transportation to supply the eastern markets, somewhat to the expense of the eastern refiners operating on Pennsylvania crude and the Mid-Continent refiners who might supply the deficit in the Pennsylvania production. Pipe lines have decreased the transportation costs for the refiners in the Chicago district and the development of inland waterways may extend the advantage of these refiners such as the proposed development of the Mississippi River for water transportation south of St. Paul and Minneapolis and the opening of a waterway from the Mississippi to the lakes. Transportation will continue to play an increasingly important part in setting the prices in the future and the equalization of rates will tend to establish the same price in all parts of the country.

RULING ON OIL PERMIT

An applicant for an oil and gas prospecting permit can gain no right to the land involved until cancellation of the outstanding permit, regardless of the fact that a relinquishment may have been filed simultaneously with the application, the Department of the Interior has ruled in a decision just announced.

GASOLINE PRICES EFFECTIVE SEPTEMBER 1, 1927

Table showing gasoline tank wagon prices as of September 1, 1927, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since August 1, 1927. High and low prices and state taxes also given.

	Prices Aug. 1	August Changes	Prices Sept. 1	High and Low —1926—		High and Low —1925—		Tax Sept. 1, 1927
Birmingham, Ala.	14.0	....	14.0	20.0	16.0	20.0	13.0	4.0
Phoenix, Ariz.	19.0	....	19.0	22.0	19.0	20.0	18.0	3.0
Little Rock, Ark.	13.0	....	13.0	18.0	14.0	19.0	12.0	5.0
San Francisco, Calif.	14.0	....	14.0	16.0	13.0	15.0	13.0	3.0
Denver, Colo.	16.0	....	16.0	20.0	16.0	20.0	12.0	3.0
Hartford, Conn.	19.0	....	19.0	21.0	17.0	21.0	15.0	2.0
Dover, Del.	16.0	....	16.0	20.0	17.0	21.0	15.0	3.0
Jacksonville, Fla.	13.0	11 10.0	10.0	19.0	12.0	19.0	12.0	5.0
*Atlanta, Ga.	14.0	27 12.5	12.5	21.0	14.0	21.0	14.0	3.5
Boise, Idaho	19.5	....	19.5	24.0	20.0	21.5	15.0	4.0
Peoria, Ill.	9.0	....	19.0	19.2	10.5	19.2	10.5	2.0
Chicago, Ill.	14.0	....	14.0	18.0	15.0	18.0	13.0	2.0
Indianapolis, Ind.	13.2	....	13.2	19.2	16.2	19.2	13.2	3.0
Des Moines, Iowa	13.0	....	13.0	19.5	16.0	19.5	13.5	3.0
Wichita, Kans.	11.8	....	11.8	16.8	14.8	18.8	8.8	2.0
Louisville, Ky.	14.0	....	14.0	20.0	17.0	19.0	12.0	5.0
New Orleans, La.	12.5	....	12.5	17.5	13.5	18.5	11.5	†3.0
Augusta, Me.	19.0	10 17.0	17.0	21.0	17.0	22.0	15.0	3.0
Baltimore, Md.	16.0	....	16.0	19.0	15.0	19.0	13.0	4.0
Springfield, Mass.	17.0	....	17.0	21.0	17.0	21.0	15.0	...
Detroit, Mich.	13.8	....	13.8	19.8	16.8	19.8	13.8	2.0
Duluth, Minn.	12.5	....	12.5	20.5	15.5	20.5	13.5	2.0
Natchez, Miss.	12.5	....	12.5	18.5	15.5	18.5	11.5	4.0
Kansas City, Mo.	10.9	....	10.9	18.9	15.9	18.9	12.9	†3.0
Helena, Mont.	19.5	....	19.5	24.0	21.0	24.0	18.0	3.0
Omaha, Neb.	12.25	....	12.25	19.25	14.25	19.25	10.0	2.0
Reno, Nev.	18.0	....	18.0	19.5	16.5	18.5	16.5	4.0
Newark, N. J. ?	18.0	10 17.0	16.0	19.0	15.0	19.0	13.5	2.0
Albuquerque, N. Mex.	16.0	....	16.0	26.5	20.0	23.5	19.5	5.0
New York, N. Y.	19.0	9 17.0	17.0	21.0	17.0	22.0	15.0	...
Charlotte, N. C.	16.0	....	16.0	19.5	15.5	20.0	12.0	4.0
Fargo, N. D.	14.0	....	14.0	21.0	18.9	20.9	14.9	2.0
Cleveland, Ohio	16.0	....	16.0	20.0	16.0	18.5	15.0	3.0
Tulsa, Okla.	12.0	....	12.0	17.0	13.0	18.0	9.5	3.0
Portland, Ore.	14.5	....	14.5	16.0	13.0	15.0	13.0	3.0
Philadelphia, Pa.	14.0	....	14.0	20.0	17.0	21.0	15.0	‡3.0
Providence, R. I.	17.0	....	17.0	21.0	17.0	22.0	15.0	2.0
Charleston, S. C.	15.0	....	15.0	19.5	15.0	20.5	12.5	5.0
Huron, S. D.	14.5	....	14.5	20.5	14.0	20.0	13.0	4.0
Memphis, Tenn.	12.0	....	12.0	18.5	13.5	18.5	10.5	3.0
Dallas, Tex.	12.0	22 11.0	11.0	17.0	13.0	18.0	10.0	2.0
Salt Lake City, Utah	17.5	....	17.5	22.5	18.5	21.5	17.5	3.5
Burlington, Vt.	19.0	9 17.0	17.0	21.0	18.0	22.0	15.0	2.0
Norfolk, Va.	16.0	....	16.0	19.0	15.0	20.0	14.5	4.5
Washington, D. C.	16.0	....	16.0	19.0	15.0	19.0	14.0	2.0
Charleston, W. Va.	16.0	....	16.0	19.0	15.0	19.0	14.0	4.0
Milwaukee, Wis.	13.1	....	13.1	19.1	16.1	19.1	13.1	2.0
Casper, Wyo.	15.0	....	15.0	20.0	17.0	20.0	15.0	3.0
Seattle, Wash.	14.5	....	14.5	16.0	13.0	15.0	13.0	2.0
Minneapolis, Minn.	11.0	....	11.0	20.2	15.2	20.2	13.2	2.0
Average price	14.89	....	14.62	19.717	15.713	19.647	13.629	3.00

*Does not include one-half cent inspection fee. †State tax 2 cents, remainder city tax. ‡Tax paid by retail dealer.

AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of tax)

January 1, 1926	16.133
February 1	16.213
March 1	17.267
April 1	18.517
May 1	18.487
June 1	19.607
July 1	16.697
August 1	19.697
September 1	19.587
October 1	19.167
November 1	18.187
December 1	17.607
January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.160
May 1	15.320
June 1	14.720
July 1	14.86
August 1	14.89
September 1	14.62

TENNESSEE GOVERNOR SEEKS AID IN FIGHT

(Continued from Page 132)

any regard to supply and demand in the petroleum industry.

Letter to Governors

The letter which was released by the governor today follows:

"My Dear Governor: By an act of the 1927 General Assembly, Tennessee sought to regulate and stabilize the price of gasoline. Such, in the public interest, in my opinion, has become an absolute necessity. Its regulation is justified on sound grounds. In practical effect, the distribution of gasoline is now a monopoly. It is the by-product of a natural resource, capable of exhaustion. No commodity in general use is more affected with public interest.

"During my experience we have had all kinds of prices in this State. The fair retail price of gasoline can at all times be easily ascertained. Yet there is no stability to the market. We have high retail prices when gasoline is cheap at the refinery, and often have lower prices when it is higher at the refinery. It is subject to constant fluctuation and manipulation. Some distributors are unconcerned about any profits, using them for unnecessary and elaborate sales stations and other unnecessary facilities, so reducing their Federal taxes. Independent dealers and, in fact, all distributors, are in constant fear and menace of the Standard Oil Co. They dare not initiate, under present conditions and practices, any genuine competition.

"Our last Legislature did not pass the exact bill which we wanted, but did pass a bill which was a long step in the right direction. The large companies immediately went into Federal Court, and recently this bill was held to be unconstitutional on the single ground that the states have no police powers to regulate the sale and distribution of gasoline. I cannot conceive a more harmful decision.

"Copies of the law and the court's opinion are enclosed for your information. Also, a sheet showing the excessive spread in Tennessee on the retail price of gasoline at this time. To these your serious attention is invited. Every state is vitally affected. It would be well, I respectfully submit, for your state to intervene in this case to the end that this decision may be reversed and the power of the state sustained to regulate the commodity. Our attorney general has communicated with your legal department."

INVESTIGATION SHOWS GASOLINE MORE VOLATILE

(Continued from Page 132)

Until recent years there has been a distinct difference between "summer" and "winter" gasoline; that marketed during the summer being less volatile than that sold during the winter. This summer the difference between "summer" and "winter" gasoline is shown only in the lower end of the distillation range while the upper end is more volatile. This tendency toward uniformity confirms the observation made in the fifteenth survey.

Distillation curves representing the present Federal specification for United States motor gasoline and the average of all samples in the present survey are given in Figure 1.

The samples were tested in accordance with methods given in Bureau of Mines Technical Paper 323-A, and in the case of samples from Laramie, Wyo., and Denver, Colo., the resulting figures were corrected for altitude. All temperatures are shown in degrees Fahrenheit.

NORTH AND WEST TEXAS

(Continued from Page 39)

junked and abandoned at 490 feet. Grubbs & Gill's No. 1 Gault, was junked and abandoned at 160 feet.

Cooke County

Gainsville Oil & Gas Co.'s No. 2 Stoffels, made 142 bbls. initial from sand at 1,669-90 feet. Gray and associates' No. 3 Public Park, is a 150-bbl. well at 1,647-49 feet. Lynch Stahl and associates' No. 3 Koelzer, made 12 bbls. initial from 1,302-75 feet. Ruwaldt and associates' No. 1 Danglemeyer, was dry and abandoned at 2,105 feet.

Eastland County

Hurdleston's No. 1 Fox, was shot with 10 quarts at 1,608-17 feet and made 75 bbls. initial. Adams and associates' No. 3 Grove, was a 40-bbl. well after a 150-quart shot at 3,825-65 feet. Brown Oil Co.'s No. 1 Beene, was abandoned at 3,204 feet. McCamey and associates' No. 1 Morrison, was dry and abandoned at 1,546 feet.

Jack County

L. M. Lamar's No. 2 Moore, was dry and abandoned at 558 feet. Seaboard Oil & Gas Co.'s No. 4 made 80 bbls. initial at 1,992-94 feet.

McCullough County

Gibson's No. 1 Rice, was dry and abandoned at 800 feet. Van Bibber and associates' No. 1 Smith, was dry and abandoned at 1,000 feet.

Montague County

The Texas Company's No. 1 Cunningham-B, was completed at 827-40 feet as a 23,000,000-foot gas well. Same company's No. 1 Hinton, is a 3,000,000-foot gas well at 239-40 feet. The Texas Company's No. 4 Maddox B, made 25 bbls. initial at 866-85 feet.

Shackelford County

Phillips Petroleum Co.'s No. 4 Brazell, was dry and abandoned at 4,507 feet. Wilson Drilling Co.'s No. 1 Lazarus, was dry and abandoned at 2,003 feet.

Stephens County

Pace & Wards' No. 1 Sloan, was shot with 80 quarts at 3,286 to 3,341 feet and is making 35 bbls. and 3,500,000 feet of gas.

Throckmorton County

Red Bank Oil Co.'s No. 2 Cole, made 180 bbls. initial at 4,282-94 feet.

Wichita County

Duncan & White's No. 2 Nitschke, is a 10-bbl. well at 750-51 feet. Elliott & Hammon's No. 1 Chilson, was dry and abandoned at 735 feet. Clarke and associates' No. 3 Honaker, made 15 bbls. initial from 1,821-31 feet. Petroleum Producers Co.'s No. 3 Munger, was dry and abandoned at 2,020 feet. C. P. Sheldon's No. 1 Barton, was dry and abandoned at 1,902 feet. The Texas Company's No. 65 Honaker, was dry and abandoned at 2,202 feet.

Wilbarger County

Consolidated Oil Co.'s No. 1 Wheeler, was dry and abandoned at 2,004 feet. Waggoner Refining Co.'s No. 2 Wagg-B, is making 117 bbls. at 2,363-74 feet.

Young County

Roberts Oil Corp.'s No. 2 Graham, was dry and abandoned at 900 feet. Christie Brothers' No. 8-A McLaren, made 15 bbls. initial from 2,412-38 feet, total depth 2,446 feet. Humphries Corp.'s No. 1-B Griffin, was dry and abandoned at 4,537 feet. Mid-Tex Oil & Gas Co.'s No. 2 Childress & Donnell, did 375 bbls. initial at 3,340-58 feet. Ruthada Oil Co.'s No. 3-A Stovall, made 75 bbls. initial from 4,230-4,300 feet.

GEOLOGICAL DISTILLATION OF PETROLEUM

(Continued from Page 92)

its accompanying distillation under the influence of gas pressure generated by the distillation, or (2) subsequently, under the influence of artesian circulation and the general rearrangement of rock fluids.

Zonal Variations in Character of Oils

In a general way the nature of the oil from each of the three zones would be peculiar to its zone.

In Zone 1 the only remaining oil would be a light end-product of the distillation trapped and protected from flushing by circulating water. In Zone 2 oils of average good grade would predominate, modified locally under special conditions of accumulation or subsequent history. In Zone 3 the oils would be expected to have been considerably altered in the course of their more extensive migrations. They might have become lighter as a result of fractionation, but more commonly they would have become heavier on account of contact with oxidizing minerals or with sulphate waters.

As a generalization—the zone having highest carbon ratios would have light oils and the zone having lowest carbon ratios would have heavier oils. Special oxidizing conditions might, however, yield heavy oils in any one of these zones.

Bearing on Carbon Ratio Theory

The theory here proposed has much in common with the carbon ratio theory proposed by White[7] but it offers different explanations of some of the facts which have commonly been associated with the carbon ratio theory. Brief comparison of the two theories is made in the following paragraphs.

According to both theories, the original source of the oil is the dynamic metamorphism of the mother substances of petroleum contained in the rocks. The existence of oil pools previous to metamorphism is not an essential part of White's theory, and is mentioned only incidentally by him, though it seems to be taken as an integral part of the theory by some of his followers and has been made the basis of serious criticism of the theory[8]. According to the theory here proposed, the possibility of such pre-existing pools is recognized, but they would form no necessary first step in the process. Direct production of oil and gas from the mother substances by destructive distillation and cracking under the influence of dynamic metamorphic conditions is the essence of both theories.

Under both theories, the regions of greatest metamorphism would now contain no oil, or only minor amounts of high grade oil and, possibly, gas. The reason for this general absence of oil is the same under both, namely, that the conditions which produced the metamorphism effectively drove the oil vapors out of the metamorphosed zone into bordering cooler regions, and that under cracking-still conditions the lightest oils and the gases are the products yielded in the later stages of the cracking[9].

Degree of Metamorphism

The fact that the limits of the region in which commercial oil pools may be expected happen to coincide with the 60 or the 65 isocarb means simply that the degree of metamorphism which altered the coals to this extent happens to have been the same as that which expelled the oil vapors more or less completely from the rocks.

A certain amount of correspondence between the degree of metamorphism and the grade of the oil, such as is stressed by White, would be expected under the theory here proposed because the lighter end products of the cracking would tend to gather nearest to the regions of higher metamorphism. It is also recognized that the nature of the mother substances and a complex series of interacting relations of temperature and pressure would influence the grade of the oils.

The theory here proposed would account for the heavier oils now found in the regions of lower carbonization, not as the original products of slight metamorphism, but as altered oils which have become oxidized in the course of their secondary migrations away from their sources. At the same time it is recognized that heavy oils might be produced in the early stages of metamorphism or in regions which have suffered only moderate degree of metamorphism.

Secondary Migration

Recognition of the possibility of extensive secondary migration with its attendant likelihood of changes in the gravity of the oil makes it usless to attempt to tie up the gravities of the oils with the degree of metamorphism of the coals of the regions where the oil is now found, except in the regions of greatest metamorphism. Outside the latter, in the regions of lower carbon ratios—which are also the areas of secondary migration and accumulation as outlined in this paper—oils of any grade, except possibly the highest, should be expected, and the presence of heavy oils beneath lighter oils should not be considered anomalous because, according to the theory here proposed, the gravity of the oils in these areas is not dependent upon the carbon ratios, but, rather, on the chemical conditions which the oil has encountered in its containing reservoirs and on its migrations to them.

Likewise, in areas of slight metamorphism the gravities of the oils should not be expected to be related to the age of the strata in which they are now found. If, as White has urged[10], it is dynamic metamorphism associated with mountain building which devolatilizes the coals, it is presumably the same dynamic metamorphism which produces the oils and drives them out of the most highly metamorphosed regions. For any particular period of diastrophism, nearness to the seat of the disturbance, and the degree of stress endured would determine the amount of metamorphism, not the age of the strata involved. Therefore, following the argument here presented: From all strata subjected to severe metamorphism in any particular period of diastrophism the oils would have been driven out completely or only the lighter oils would have been retained, while in all strata in the outer zones of slight metamorphism—the zones of secondary migration and accumulation—the gravities of the oils would be controlled by the chemical conditions encountered on the road to their present resting places.

Application of the Theory

The theory of the origin, migration, and accumulation of oil outlined in preceding paragraphs is presented as a working hypothesis which may explain some of the puzzling problems of petroleum geology. The generation of large quantities of petroleum somewhat in the manner outlined seems to be almost a necessary result of geologic conditions which are now known to have been commonly associated with mountain building. The lateral escape and later condensation of the petroleum vapors generated in the areas undergoing metamorphism should, it seems, have concentrated abundant oil and gas in belts outside the metamorphosed zone. Later shifting of rock fluids and the development of artesian circulation in later stages of physiographic evolution seems competent to have shifted some, at least, of this oil for long distances.

Study of the oil fields of the world with this hypothesis in mind would, it is believed, show that many of them are related, somewhat in the manner here outlined, to belts of dynamic metamorphism competent to have been the sources of the oil. Obviously the actual conditions in nature are complex, and it will doubtless be possible to point out oil deposits which do not seem to fit into the hypothesis. Obviously, also, there must be all degrees of metamorphism and geologic distillation, ranging from the stage of complete devolatilization to the stage in which no oil has been produced by distillation in place. As a consequence, some regions would contain oil generated in place by dynamic metamorphism of moderate intensity[11] too weak to drive it outward from its source, other regions would contain only such oil as had reached them by secondary migration.

By Way of Illustration

The application of the theory to the Oklahoma-Kansas-Missouri-Iowa region may be sketched by way of illustration, but the reader is asked to bear in mind that a complete picture cannot be given in a few paragraphs. The region bordering the Ouachita Mountains on the north seems to satisfy the conditions postulated, namely, a thick geosynclinal series of carbonaceous sediments caught and subjected to cracking-still conditions and metamorphosed under the range overthrust from the south. Laterally in the beds involved in this metamorphism, but outside the metamorphosed zone, lie the rich oil accumulations of Oklahoma, where almost every member of the geologic sequence capable of serving as an oil reservoir is relatively abundant and highly saturated with oil. It is a region of exceptional oil accumulation and corresponds to Zone 2 of the preceding classification, where part of the oil may have been distilled in place, but where much of it accumulated after being driven out of the more highly metamorphosed zone adjacent.

Outside the Oklahoma belt of abundant oil accumulation lies the broad zone of secondary accumulation embracing parts of Oklahoma, Kansas, Missouri, Iowa, and adjoining states. In this region it could, it is believed, be shown to be a general rule that the amount of oil in available reservoir rocks decreases with distance from the supposed source. In northeastern Kansas and adjoining areas many reservoir sands are found, but oil is scarce. Much of the oil, especially in the deeper sands, is heavy, presumably on account of oxidation by sulphate waters. It is doubtful if it could be shown that bituminous shales of the type commonly supposed to be the source of the oil under the theory of local origin are less abundant here than in regions where more oil is found.

An application of the theory such as that presented in the preceding paragraphs can be only suggestive. It is not intended so much as proof as it is to suggest other similar applications and to serve as a guide in the search for pertinent facts having a bearing on the problem. Among the observations needed are large numbers of actual records showing the presence or absence of bituminous source rocks in close association with oil pools; all possible information on gravities of oil in relation to geologic factors likely to affect the gravity, such as character of the associated waters, unconformities, oxidizing sediments ,and the possibilities of free or restricted fluid flow in the reservoir rocks; and, finally, a broad study of the world-wide distribution of oil in relation to localities where thick bituminous sediments have been metamorphosed in connection with mountain-making earth movements.

[7]David White, "Some Relations in Origin between Coal and Petroleum," Washington Acad. Sci. Jour., Vol. 5 (1915), pp. 189-212; "Late Theories Regarding the Origin of Oil," Bull. Geol. Soc. Amer., Vol. 28 (1917), pp. 727-734; "Genetic Problems Affecting Search for New Oil Regions," Trans. Amer. Inst. Min. and Met. Eng., Vol. LXV (1921), pp. 176-198.

[8]George Edwin Dorsey, "The Present Status of the Carbon Ratio Theory," Bull. Amer. Assoc. Petrol. Geol., Vol. 11 (1927), pp. 455-465.

[9]See literature on destructive distillation of oil shales and on cracking, also Roswell Johnson, "The Relation of the Quality of Oil to Deformation," Econ. Geol., Vol. 10 (1915), pp. 676-8.

[10]David White, "Progressive Regional Carbonization of Coals," Trans. Amer. Inst. Min. and Met. Eng., Vol. LXXI (1925), pp. 253-281; U. S. Bureau of Mines, Vol. 38.

[11]See Alex W. McCoy, "Notes on Principles of Oil Accumulation," Jour. Geol., Vol. XXVII (1919), pp. 252-262; "A Short Sketch of the Paleogeography and Historical Geology of the Mid-Continent Oil District and Its Importance to Petroleum Geology," Bull. Amer. Assoc. Petrol. Geol., Vol. 6 (1921) pp. 541-584.

KEROSENE CARBURETION TESTS AT UNIVERSITY

(Continued from Page 133)

passed the mixture should be leaned progressively in accordance with the curve of maximum economy mixtures in Figure 2. When the load reaches 44 per cent of the indicated horsepower this curve crosses the line of chemically perfect mixture ratio (0.0669). At 55 per cent load the mixture ratio is 0.0650, and from there on it remains constant until the wide-open throttle position is reached.

Since the mixture requirements for any load conditions are not changed by speed, the maximum horsepower curve of Figure 2 defines the mixtures required for all open throttle operation. This means that if the engine is throttled so as to operate at 50 per cent of the maximum indicated load, for which the mixture ratio should be 0.0650, and the carburetor is then opened wide to meet an increased resistance, the mixture ratio should simultaneously be automatically increased to 0.0900, that giving maximum torque.

Mixtures and Operations

The relation between the most desirable mixture ratio and different conditions of operation may thus be briefly stated as follows:

1. At idling, the engine requires a mixture strength of 0.0925.

2. For economy under level-road or throttled operation the idling mixture should be progressively weakened, and above half load the required maximum is 0.0650.

3. For high power with open-throttle operation the correct mixture is 0.0900.

It should be remembered that the results on which these conclusions are based were obtained with the inlet air at 250 degrees Fahrenheit (200-220 degrees mixed temperature), with the jacket cooling water at 150 degrees and with good distribution. Changes in these operating conditions naturally would affect the results somewhat, but the conditions were selected as the most favorable to operation on kerosene. Furthermore, most of the results were obtained with a single engine, and might be altered somewhat if the same tests were made on different power plants, but this and the previous research with gasoline indicate that mixture requirements of different engines do not vary greatly.

ARRANGEMENTS FOR OIL SHOW ABOUT COMPLETED

(Continued from Page 33)

Colonel Lindbergh is expected to attend the exposition on September 30.

A fine collection of fossils, geological specimens and geological appliances will be on display in the new scientific building, according to Alf G. Heggem, chairman of the committee. The building will be devoted largely to geological and geophysical displays. The museum features are of popular interest. The Drake well replica is up and the Drake tools are on the way. The Drake well will be literally under the shadow of the giant derricks in the exposition. Two big derricks are completed.

Assembly features in connection with the exposition have not been fully arranged, but various programs are shaning. Secretary H. H. Smith of the Mid-Continent Oil and Gas Association expects a large attendance and there will be groups of notables in and out of the oil industry. Foreign Governments are sending notices of delegations. The biggest event of the week outside the exposition itself will be the association dinner the evening of September 30. Hotel reservations are well advanced and meeting places have been found for all the organizations which desire to hold special sessions.

The grounds have a distinct exposition appearance, two weeks ahead of the opening. The directors secured a contract with a city restaurant man for a cafe on the grounds. The cafe building, office building and other smaller structures are practically up.

Transportation arrangements are complete and physically in effect. Traffic arrangements extend to the doors of the buildings and exposition forces are handling every possible detail for the exhibitors. Parking, police, fire protection and general safety arrangements are complete.

LITTLE CHANGE IN OKLAHOMA MARKET

(Continued from Page 28)

available and there was evidence of a decided weakening of their position at the end of the week.

Lubricating oils moved at only a fair rate and remained at their reduced price of a week ago. The light colored oils were quoted with more firmness than the red oils. This is due to the strong entry of Texas red oils into the marketing territory of Oklahoma refiners and where cheaper oils satisfied the quality, a portion of the business went to the Texas manufacturers. Wax continues in a favorable position so far as inquiries were concerned, but there was no more than a normal movement.

Refining Unprofitable

The continued weakness of all refinery products with price concessions being made on gasoline indicates the further inability for the refiner to meet expenses. At the present low quotations for refined oils it is believed that refiners are losing money on every barrel of crude run when taking the refining operations as an independent unit. And at the present low quotations for refined oils it is believed that refiners are losing money on every barrel of crude run when taking the refining operations as an independent unit. And at the present low tankwagon prices and low crude prices, it is probable that this loss is not being equalized by the associated departments. The detailed revenue shown from skimming a barrel of Seminole crude in the Mid-Continent is included here and indicates a loss of 2 cents per barrel of crude refined before paying any sales expense, overhead, taxes, insurance, depreciation, interest, obsolence and profit. This fact has been repeated and is generally realized by refiners but their operations have not been curtailed until this month. A check of the September crude runs indicates a material reduction in all sections of the Mid-Continent. The total reduction is 35,000 bbls. and this year's runs are scheduled to practically equal those of September of last year, but this apparently only helps to equalize the increase made in the August runs, which certainly did not benefit the situation any. Some refiners were talking of a crude cut and an adjustment of the tankwagon market is generally expected after the middle of the month which will take marketers past the heavy consumption period. If refiners continue to curtail their runs with several smaller refiners shutting down entirely, that much crude will be backed up against the producers and that much more oil will be placed in storage as potential gasoline to threaten prices next year.

Gasolines and Naphthas

With gasoline selling at one-eighth to one-fourth cent below last week's quotations the Oklahoma refiners continued to offer it freely. All refiners had not gone to 6 cents and much material was moved at 6¼ cents, and in a few cases even high prices were quoted so the complete range of prices was more than one-fourth cent. All grades of gasoline reacted with U. S. Motor and 400 endpoint gasoline was generally quoted at one-fourth cent above U. S. Motor and 375 endpoint gasoline was held at one-half cent higher than U. S. Motor. In many cases a much lower endpoint was shipped than required on the order, which further indicated the poor position occupied by the lower endpoint gasolines. Not many years ago, 375 endpoint gasoline commanded a price as high as 4 cents above U. S. Motor, but efficient fractionation and low natural gasoline prices have altered this. It is probable that these higher differentials will not occur again.

Naphthas were reduced one-eighth cent to 6 cents. The volume of this material has been reduced to the point where only a few refiners manufacture it and there is little call for it from blenders at the present low margin allowed in blending natural gasoline and naphtha in competition with refinery gasoline.

Kerosene Distillates

The kerosene market showed considerable activity and, although the range of prices did not change, there was more material traded at the higher figure than last week. The 41-42 grade was in demand, the better quality material being shipped at 4⅛ to 4¼ cents, with some sales made at 4½ cents. The lower grade material did not show an improvement in price. The 42-43 grade was also in demand, and refiners who were attempting to buy this in quantities at the lower quotations for resale found but a limited supply. Some sizeable export in adjoining territories has aided the Oklahoma market.

Natural Gasolines

Grades A and AA were generally quoted at 5¾ to 6 cents and the other grades remained at last week's prices with Grade C in the best position compared to a week ago. No large export orders developed to relieve the dullness of the market and manufacturers were skeptical about their market over the month. In those cases where contracts were made for deliveries over the month there was plenty of material available at today's market price and as has been stated before, some business was turned at one-eighth cent below the present price, With this as the outlook for the immediate future the market looked anything but encouraging.

Fuel Oils and Gas Oil

Nothing of consequence occurred during the week to affect the relatively weak position of fuel oil and refiners are undecided whether the coal strike will force prices higher later in the season or the possibility of a crude cut will force them to a new low. Gas oil was weakened from a manufacturing standpoint as its value declined with gasoline as a charging stock for pressure still operations. Some light straw, low flashpoint gas oil is being moved North for use in household heating plants, but the quantity is not sufficient to make an active market.

Lubricants and Wax

Competition in lubricant sales led to cautious buying as slight concessions were made from time to time to get the business. This was particularly true of red oils which require less refinement and the price is less influenced by refining costs. The general market received a setback as a reduction in the California lubricant prices.

Wax was reported stronger in the East and refiners were generally optimistic over the improved position wax has taken over the last month, but there apparently is plenty of wax available at the Mid-Continent refinery and with movement only fair any material price advance will probably extend over a long period.

Refinery operating margin per barrel of Seminole crude based on today's low refined oil prices when skimming under average conditions in the Mid-Continent.

Pct.		
43.0	Gasoline at .06	$1.08
7.0	Kerosene at .04	.12
30.0	Gas oil at .02½	.31
17.0	Fuel oil at .75 bbl.	.13
3.0	Loss	...
	Total refined oil revenue	$1.64
	Cost of crude	$1.38
	Pipe line cost	.15
	Refining cost	.13
	Total operating expense	$1.66
	Margin per barrel of crude left for sales expense, overhead, taxes, interest, depreciation, insurance, obsolescence and profit	R .02

UNANIMOUS LITTLE RIVER AGREEMENT

(Continued from Page 29)

the output of the wells was controlled.

The Little River Field was nipped in the bud, whereas the Greater Seminole area flowed on unchecked for many months, and reached such proportions that each additional day brought in new wells in new regions, and added numerous difficulties to the task of checking the flood of oil. As the president of one prominent oil company remarked at one of the last Seminole meetings, the entire oil industry would have been much better off had Seminole never been discovered.

The Burbank shut-down was a more complete shut down than any other field, but it was a compulsory shut down. The Osage Indian nation owned the land on which the entire field was situated, and all lease owners were subjected to the stringent regulations of the Interior Department. The department ruled that any lease owners who drilled in their wells during a stipulated period would immediately have their leases cancelled, and this ruling left no choice for the owners.

The Little River Field is 6 miles south of the Bowlegs Pool, and came into prominence when the Indian Territory Illuminating Oil Co. completed its No. 1 W. E. House, NW cor. NW Section 1-7-6. The well made 13,794 bbls. for a peak, and during the 10 weeks that it flowed it produced almost $1,000,000 worth of oil. For several weeks its daily output was close to 10,000 bbls.

Over 100 Active Operations

The finding of such a large well gave impetus to a drilling campaign which soon spread over a region covering three-quarters of a mile in every direction from the well. At this time there are 102 active drilling operations under way, as shown by the accompanying map.

Trading in leases and royalties began upon a large scale, and the Gladys-Belle Oil Co., which owned the diagonal offset to the discovery well, sold its 80-acre lease (the east half of the southeast quarter of Section 35-8-6) to the Blackwell Oil & Gas Co. for a price rumored to be $600,000 in cash and $800,000 in oil. The Blackwell company immediately started eight wells upon the lease, and this brings its investment for the 80 acres up to $2,000,000. There were numerous other purchases and exchanges of interests in leaseholds in this territory, but the Blackwell-Gladys-Belle is the outstanding transaction.

Just before September 1, the Blackwell's No. 1 Nitey, SE cor. SE Section 35-8-6, touched the Wilcox sand, and at only 2 feet in began flowing 150 bbls. hourly. It has not been drilled any deeper, although the Indian Territory's No. 1 House is reported to be 20 feet in the sand. With an investment of $2,000,000 in its lease, the Blackwell company at first was reported unwilling to shut in the output of its first well, and the consensus of opinion would have found little fault with its attitude if such had been the case. After the three-day ruling was announced, the gate valves on all of the Little River wells were turned, and the production was choked down.

The discovery well had been making some water for several weeks prior to pinching in, and the 24 hours before it was choked produced 5,200 bbls. of oil and 550 bbls. of water. Within 24 hours after it was pinched in this well went absolutely dead and stopped flowing. This had been predicted by many who had closely observed the action of the well, and some were inclined to believe that the well's great flowing days were finished, and that in a very limited time it would have stopped flowing anyhow. This latter thought is not generally shared, and the majority believe that pinching in the well was solely responsible for its death. Efforts to revive the flow of the well have resulted in its making flows of 200 and 300 bbls. daily, but many are inclined to favor the thought that its big production has been sacrificed to the interests of the proration, and that it is permanently out of the picture as a large producer.

Third to Penetrate Wilcox

The third well to penetrate the Wilcox sand in this pool was the Indian Territory Illuminating Oil Co.'s No. 1 Dungan, which extended the pool a quarter mile to the west and a location to the north from the first well. This well made 3,300 bbls. in the top of the Wilcox pay, and gives evidence of big production which may be found in this part of the pool. The fourth well was the Indian Territory Illuminating Oil Co.'s No. 1 Nitey, a direct west offset to the House well, and this also made 1,900 bbls. 2 feet in the sand. Blackwell Oil & Gas Co.'s No. 2 Nitey, the second well to be finished on its lease struck the sand next, and had a flow of 2,800 bbls. the first day at 1 foot into the sand. Indian Territory Illuminating Oil Co.'s No. 2 M. A. House, one location south of the discovery well, was the sixth well to be in the sand, and is flowing unrestricted for its three-day life as this is written.

An important well in the pool is the Amerada Petroleum Corp.'s No. 1 Nitey, NE cor. SE NE Section 2-7-6, which is a southwest offset to the Indian Territory Illuminating Oil Co.'s No. 1 M. E. House. The Amerada well is in a sand thought to be the Simpson at a depth of 4,062 feet, and has swabbed 200 bbls. with some water. The water is believed to be coming from the Hunton lime, and the producing formation has not been determined.

With these six wells in the Wilcox, and the seventh well close to this sand, it is thought that the pool has a potential production of at least 40,000 bbls. daily, which has been reduced to 16,500 bbls. with further reductions coming when the period of three days has expired on the wells now flowing wide open under the ruling.

Different Drilling

One method of drilling the wells which differs from the procedure used at Seminole, Bowlegs and Earlsboro, is that at Little River, the rotary tools are used to drill through the Hunton lime, and the 8-inch casing is run through this stratum. Little attention is given to the production of the Hunton at Little River, whereas in the other pools, this formation was carefully explored, and good wells were found in it. Setting the rotary casing through the Hunton has resulted in a much better drilling time for the last 300 feet of hole, as many disastrous fishing jobs were encountered between the Hunton and Wilcox formations. It is estimated that at least 10 days' time is eliminated by this system of drilling.

From a structural standpoint, the discovery well is the highest in the field as yet, and with its elevation of 824 feet, and the top of the Wilcox struck at 4,017 feet, the Wilcox was found 3,193 feet below sea level. The Blackwell Oil & Gas Co.'s No. 1 Nitey found the sand 4,231 feet, with an elevation of 837 feet, which placed the top of the Wilcox 3,394 feet below sea level, making it the lowest well in the field to date. The wells found the sand as follows:

Indian Territory Illuminating Oil Co.'s No. 1 M. A. House, elevation 826 feet, sand 4,147 feet, below sea level 3,321 feet.

Indian Territory Illuminating Oil Co.'s No. 1 Dungan, elevation 942 feet, sand 4,220 feet, below sea level 3,378 feet.

Blackwell Oil & Gas Co.'s No. 2 Nitey, elevation 866 feet, sand 4,177 feet, below sea level 3,311 feet.

Indian Territory Illuminating Oil Co.'s No. 1 W. E. House, elevation 824 feet, sand 4,017 feet, below sea level 3,193 feet.

Indian Territory Illuminating Oil Co.'s No. 1 Nitey, elevation 855 feet, sand 4,148 feet, below sea level 3,293 feet.

Blackwell Oil & Gas Co.'s No. 1 Nitey, elevation 837 feet, sand 4,231 feet, below sea level 3,394 feet.

River Divides Wells

One of the peculiarities occasionally found in oil fields is found on the lease owned jointly by Phillips Petroleum Co. and J. G. Lyons, the NE of the NW of Section 2-7-6. There are two wells being drilled upon this lease, and the Little River runs between them. The river is not shown on the accompanying map, but the distance between the wells is 520 feet. Owing to the impassable nature of the adjacent country, when it is desired to go from one well to the other by car it is necessary to travel 5½ miles to the west before the trip can be negotiated.

A well which is being closely observed is the Prairie Oil & Gas Co.'s No. 1 Aldrich, SW cor. SE Section 34-8-6. This well is close to the Wilcox sand and is 1¼ miles from the present limits of production. Should it find the sand productive, it will prove up a vast area which will be dotted with rigs.

There are now 10 wells out of the 102 drilling operations which have been standardized, and which may penetrate the Wilcox sand within two weeks. They are I. T. I.'s No. 1 Reed, No. 1 Jackson, No. 2 Nitney; Twin State Oil Co.'s No. 1 Davis, and Barnsdall Oil Co.'s No. 1 Davis, all in Section 2-7-6; Mid-Continent Petroleum Corp.'s Nos. 1 and 2 Wadsworth, Section 36-8-6; Blackwell Oil & Gas Co.'s Nos. 3 and 6 Nitney; Prairie Oil & Gas Co.'s No. 1 Dungan, Section 35-8-6, and Prairie Oil & Gas Co.'s No. 1 Aldrich, Section 34-8-6.

LARGE DROP IN CRUDE RUN TO STILLS

(Continued from Page 31)

Name and Location—	Daily Capacity	Runs Sept. 1	Runs August 1
Magnolia Petroleum Co., Fort Worth	12,000	5,000	7,000
Magnolia Petroleum Co., Corsicana	3,000	3,000	3,000
Megargel Refining Co., Megargel	1,500	Shut down	Shut down
Noble Oil & Gas Co., Burkburnett	4,500	3,000	2,500
Olney Oil & Refining Co., Olney	1,500	1,800	1,500
Oriental Refining Co., Dallas	5,000	Shut down	Shut down
*Oriental Refining Co. (Trinity), Dallas	5,000	3,000	2,750
Orient Petroleum Co., Wichita Falls	4,000	1,200	1,200
Panhandle Refining Co., Wichita Falls	4,000	3,300	3,300
The Petroleum Corp., Electra	2,000	Shut down	Shut down
Primrose Refining Co., Wichita Falls	1,500	Shut down	1,000
Primtex Refining Co., Grand Prairie	2,500	Shut down	Shut down
San Angelo Refining Co., San Angelo	1,500	1,500	1,500
Simms Oil Co., Dallas	5,000	4,000	3,800
Star Refining & Producing Co., Fort Worth	1,800	Shut down	250
The Texas Company, Dallas	15,000	10,000	10,000
Tidal Western Refining Co., Burkburnett	3,000	2,200	2,000
Texas Pacific Coal & Oil Co., Fort Worth	6,000	2,000	2,600
Transcontinental Oil Co., Fort Worth	5,000	3,000	4,000
Travis Refining Co., Burkburnett	750	Shut down	150
Waggoner Refining Co., Electra	3,400	2,400	2,400
White Eagle Oil & Refining Co., Fort Worth	4,000	....	1,500
Valley Refining Co., Wichita Falls	2,500	1,500	2,000
Total	179,800	96,550	111,900

*Operated by Magnolia Petroleum Co.

REFINERY OPERATIONS IN KANSAS

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Sept. 1	Runs August 1
Arkansas City Refining Co., Arkansas City	8,000	Shut down	Shut down
Barnsdall Refineries, Inc., Wichita	5,000	1,250	3,000
Derby Oil Co., Wichita	5,000	3,500	3,500
Derby Oil Co., Russell	2,500	Shut down	Shut down
Eldorado Refining Co., Eldorado	3,500	2,500	2,500
Golden Rule Refining Co., Wichita	1,000	800	1,000
Kanotex Refining Co., Arkansas City	10,000	3,500	7,000
Manhattan Oil Co., Kansas City	7,000	4,000	5,000
Miller Petroleum Co., Humboldt	2,000	Shut down	Shut down
National Refining Co., Coffeyville	6,500	6,400	6,400
Peerless Oil Refining Co., Chanute	3,000	2,000	2,000
Roxana Petroleum Corp., Arkansas City	20,000	16,000	15,000
Sinclair Refining Co., Coffeyville	8,000	9,500	9,500
Sinclair Refining Co., Argentine	8,000	8,000	8,000
Skelly Oil Co., Eldorado	15,000	12,000	13,000
Standard Oil Co. of Kansas, Neodesha	12,000	7,000	7,000
Vickers Petroleum Co., Potwin	3,500	1,600	1,800
White Eagle Oil & Refining Co., Augusta	8,000	6,500	8,000
West Missouri Group—			
Alliance Rubber Producing Co., Centropolis	2,000	Shut down	Shut down
Wilhoit Refining Co., Joplin	1,500	....	500
Total	132,500	84,550	96,200

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 38)

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, B-16, School Land, elev. 2,844 ft. — Top salt 870 ft.; top lime 3,177 ft.; first show 3,420-22 ft.; pay 3,471-3,515 ft.; 160 ft. oil in hole; shot 180 qts.; estimated 1,000,000 ft. gas; swabbed and flowed 82 bbls. June 30; cleaned out and shut down for orders; 800 ft. oil in hole.

J. S. Cosden et al's No. 3 G. W. Connell-A, SE cor. NE Sec. 13, Blk. B-16 — Top salt 863 ft.; show oil 3,375 ft. and 3,499 ft.; top lime 3,195 ft.; shot 208 qts. 3,465-3,545 ft.; 300 ft. oil in hole; shut down.

FISHER COUNTY

Hucony Gas Co. No. 1 Langford — Rigging up to drill deeper from 3,258 ft.; cleaning out 3,258 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur. — Hole full salt water 2,345-2,520 ft.; shut down for orders 3,304 ft.

Marland Oil Co. and Texon's No. 1 McCall, Sec. 108, Blk. 3, H. & T. C. Sur. — Rig.

Miley Oil Corp. and Marland Oil Co.'s No. 1 W. W. Ammons, Sec. 198, Blk. 3, H. & T. C. Sur. — Underreaming 6-in. to 3,235 ft., 60 ft. off bottom.

R. W. Raney's No. 2 Maberry, Sec. 56, Blk. 1, T. & P. Sur. — Shut down for orders 2,725 ft.

Sinclair Oil & Gas Co.'s (was Bourdon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. — Set 8-in. 2,572 ft.; shut down 2,577 ft. for repairs.

The Texas Company's No. 1 D. S. Stevens, C SW SE SE Sec. 79, Blk. 1, H. & T. C. Sur. — 8-in. froze 2,302 ft.; fishing.

FOARD COUNTY

C. H. Clark et al's No. 1 Atkins, SW cor. Sec. 89, Blk. 44, H. & T. C. Sur. — Drilling 175 ft.

Fain-McGaha Oil Corp.'s No. 1 Mathews — Made 50 bbls. 1,484-94 ft.; 4,000,000 ft. gas at 1,668-73 and 1,676-81 ft.; more gas 1,847-51 ft. and 1,863-64 ft.; gas sand 1,965-75 ft.; estimated 10,000,000 ft.

Humble O. & R. and Navarro Oil Co.'s No. 1 L. McAdams, C S ½ Sec. 27, Blk. L, S. P. Sur. — Hole full water 2,560 ft.; water sand 3,460-70 ft.; set 6-in. 3,488 ft.; drilling broken lime 3,650 ft.

The Texas Company's No. 1 Watkins — Drilling 2,205 ft.

GAINES COUNTY

Westheimer & Daube's No. 1 Birge & Forbes Land Co., Sec. 308, Terrell County School Land. — Cemented 8-in. 3,900 ft.; standardizing.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur. — Small show oil in gray lime 1,884-1,902 ft.; shut down 2,600 ft.; show oil and hole full water 2,420-60 ft.

GLASSCOCK COUNTY

California Co.'s No. 1 W. B. Currie, Sec. 215, Blk. 29 — Water sand 1,085-90 ft.; drilling 1,200 ft.

Green et al's No. 1 F. G. Oxsheer, Sec. 6, Blk. 34, T. & P. Sur., elev. 2,540 ft. — Top salt 1,245 ft.; drilling 3,249 ft.

Landreth Producing Corp.'s No. 1 A. L. Houston, elev. 2,611 ft. — Top salt 1,410 ft.; drilling 3,575 ft.

World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Twp. 2-S, T. & P. Sur., elev. 2,553 ft. — Top salt 1,180 ft.; drilling 3,105 ft.

HASKELL COUNTY

Edmiston & Critton's No. 1 Reynolds Cattle Co., Sec. 13, A. Cunningham Sur. A-117

S. S. Kouri et al's No. 1 L. Wright estate, Sec. 10, Blk. 3, H. & T. C. R. R. Sur.

HOWARD COUNTY

California Co.'s No. 1 Fisher Brothers, SE SW NW Sec. 36, Blk. 33, T. & P. Sur. T-1-S — Fighting cave 400 ft.

Fred Carey et al's No. 2 G. O. Chalk, SE NW Sec. 124, Blk. 29 — Shut down 1,040 ft.; hole full salt water.

W. W. Donnelly et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2 N, T. & P. Sur., elev. 2,552 ft. — Drilling 2,420 ft.

Henshaw et al's No. 1 S. T. Eason, Sec. 6, Blk. 32, T. & P. Sur., T-2-S — Show oil 1,340-54 ft.; shot 40 qts.; cleaning out and may drill deeper.

Marland Oil Co. and Zoch's No. 1 Jones, Sec. 32, Blk. 27, T. & P. Sur., elev. 2,218 ft. — Shut down 500 ft.

Marland Oil Co.'s No. 1 A. M. Fisher, Sec. 1, Blk. 33, T. & P. Sur., T-2-S, elev. 2,730 ft. — Cemented 8¼-in. 1,587 ft.

Marland Oil Co.'s No. 1-A Guitar Trust Est. — Rig.

Marland Oil Co.'s No. 1 A. G. Haines, C SE Sec. 20, Blk. 32, T. & P. Sur., T-1-N — Drilling 870 ft.

Peer Oil Corp.'s No. 1 Read, C NW Sec. 39, Blk. 30, T. & P. Sur., T-1-N — Rigging.

Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mrs. Connaly — Building rig.

Texon O. & L. Co.'s and Marland Oil Co.'s No. 2 W. R. Settles — Swabbed 94 bbls. in 9 hours at 1,280-84 ft.; drilling deeper.

Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mabel O. Quinn — Fishing for bit 2,635 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 — Shut down 235 ft.

IRION COUNTY

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur. — Shut down 2,500 ft.

JEFF DAVIS COUNTY

Humble O. & R. Co.'s No. 2 Crecencio Flores, 1,130 ft. N and 850 ft. E of SW cor. Sec. 34, Blk. 58, T. & P. Sur., Twp. 8 — Drilling 500 ft.

JONES COUNTY

Cole & Hart's No. 1 Joe Dillard, NW cor. Sec. 2, Blk. 17, T. & P. Sur. — Spudded with spudder; moving in machine.

Midwest Exploration Co.'s (was Campbell et al's) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft. — Top pay 2,498 ft.; deepening to 2,524 ft.; swabbed 115 bbls.; shut down for orders 3,009 ft.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands — Seven bailers salt water per hour at 1,465-1,500 ft.; hole full water 1,900-07 ft.; fishing for bit.

Hutson & Weaver's No. 1-A Smith, Sec. 51, Blk. 18, T. & P. Sur. — Shut down for fuel and casing 800 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. — Small show oil 2,496 ft.; shut down 2,545 ft.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 — Hole full salt water 2,390-2,400 ft. and 2,435 ft.; hole full salt water 3,015-20 ft.; shut down 3,503 ft.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 — Fishing tools 1,740 ft.

Stebbins Oil Co.'s No. 2 Higgs, SE cor. Sec. 30, W. T. Scott Sur. — Location.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands — Shut down 2,505 ft.

Tomberlin et al's No. 1 Oscar Clapp, CSL SW Sec. 37, Blk. 16, T. & P. Sur. — Drilling 2,380 ft.

KENT COUNTY

Marland Oil Co. and Texon O. & L. Co.'s No. 1 Bilby, Sec. 41, Blk. K, Thompson Sur. — Location.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft. — Total depth 2,865 ft.; rig rebuilt.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,590 ft. W of NE cor. Sec. 31, Blk. 4 — Cleaning out 1,150 ft.

Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T. & B. Sur. — Hole full water 1,710-15 ft., and 2,760-2,800 ft.; drilling 3,176 ft.

The Texas Company's No. 1 J. O. Bowden, Sec. 115, Blk. 45, H. & T. C. Sur. — Lime 1,240-45 ft.; estimated 100,000 ft. gas; hole full water 1,835 ft.; pipe stuck at 2,130 ft.

The Texas Company's No 1 Teague — Drilling hard lime 2,650 ft.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. B-25, Public School Land, elev. 3,120 ft. — Top salt 1,210 ft.; show gas 1,600-15 ft.; shut down for orders 4,295 ft.; 800 ft.; sulphur water from 4,020-25 ft.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur., elev. 2,934 ft. — Shut down 1,020 ft.; in litigation.

LYNN COUNTY

Elpo Oil Co.'s No. 1 Nevols, NW cor. Sec. 6, Blk. C-42, School lands — Moving in tools.

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2, L. & S. V. Sur. — Shut down 1,400 ft.

MIDLAND COUNTY

Orbit Oil Co.'s No. 1 Moreland, C SE Sec. 17, Blk. 39, T. & P. Sur. T-1-S — Shut down 185 ft.

MITCHELL COUNTY

Robert Thraves' No. 1 C. Way, Sec. 91, Blk. 27, T. & P. Sur. T-1-N — Total depth 2,508 ft.; repairing rig.

Tex-O-Kan Oil Co. and Robert Thraves' No. 1 W. F. Sanders — Cementing 6-in. at 2,673 ft.; cleaning out.

B. E. Walter et al's No. 1 J. E. Dollen, NW cor. SW Sec. 11, Blk. 27, T. & P. Sur. — Shut down 3,955 ft.; hole full sulphur water.

NOLAN COUNTY

J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth, Sec. 90, Blk. 21, T. & P. Sur. — Drilling 2,685 ft.

Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigged up and shut down.

Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — Underreaming 2,750 ft.

PECOS COUNTY

George Anderson et al's No. 1 McKenzie, C SE N half Sec. 6, Blk. 604 — Drilling 300 ft.

George Anderson's No. 1 Sherbine Brothers — Rig on ground.

Allsman & Bell's No. 3 Pecos River bed — Location.

Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. Sur., elev. 2,556 ft. — Flowed sulphur water 3,250 ft.; drilling 3,460 ft.

Buell et al's No. 1 Batchelor, C N ½ NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft.; flowed sulphur water 1,775 ft.; drilling 2,780 ft.

Buell & Hagan's No. 1 Jasper, 1 mi. S and W NE cor. Jasper Co. School Land No. 104 — Fishing for tools 1,037 ft.

California Co.'s No. 2 Yates, Sec. 34, Blk. 194 — Rig.

California Co.'s No. 3 Yates, Sec. 34, Blk. 194 — Rig.

California Co.'s No. 4 Yates, Sec. 34, Blk. 194 — Rig.

California Co.'s No. 1 M. A. Smith — Drilling 435 ft.

M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, I. & G. N. Sur. — Shut down 500 ft.

Bob Elmore's No. 1 M. Holmes, Sec. 542, Blk. 1, I. & G. N. Sur., elev. 2,176 ft. — Top salt 335 ft.; slight show oil and 2 bailers sulphur water 1,500 ft.; small show gas at 1,515 ft.; drilling red beds 1,650 ft.

Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur., elev. 2,562 ft. — Shut down 2,550 ft.; 200 ft. of sulphur water at 2,530 ft.

Gulf Production Co.'s No. 1 Smith, NE cor. Sec. 28, Blk. 194 — Cementing 10-in. 866 ft.; drilling 1,001 ft.

George A. Henshaw, Jr., No. 1 Snyder, Sec. 29, Blk. 144, T. & St. L. Sur. — Location.

Humble O. & R. Co.'s No. 1 M. A. Smith, NE cor. Sec. 36, Blk. 194, G. C. & S. F. Sur. — Drilling 275 ft.

Mazda Oil Co. and Savoy Oil Co.'s No. 1 Smith, Sec. 24, Blk. 194, G. C. & S. F. Sur. — Rig up.

Mazda Oil Co. and Savoy Oil Co.'s No. 2 Smith, Sec. 24, Blk. 194, G. C. & S. F. Sur. — Location.
McMan and Marland's No. 2 I. G. Yates — Spudding.
McMan and Marland's No. 3 I. G. Yates — Rig.
McMan and Marland's No. 4 I. G. Yates — Rig.
McMan and Marland's No. 5 I. G. Yates — Rig.
McMan and Marland's No. 6 I. G. Yates — Rig.
Mid-Kansas and Transcontinental Oil Co.'s No. 2 Smith-Taylor — Spudding.
Mid-Kansas and Transcontinental's No. 8 Yates-A — Drilling 200 ft.
Olean Petroleum Co.'s No. 1 G. N. Harral — Drilling 330 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. Fort Stockton, elev. 2,980 ft. — Shut down 3,440 ft.
Quinby Oil Co.'s No. 2 Bennet, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. — Shut down 1,457 ft.
Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. N and 1,320 ft. E. SW cor. Sec. 593, Abst. 3,009 — Shut down 700 ft.
Red Bank Oil Co.'s No. 1 McKenzie, C N ½ Sec. 21, Blk. 126, T. & St. L. Sur., elev. 3,256 ft. — Show sulphur water 2,641 ft.; hole full water 2,660 ft.; shut down 3,098 ft.
Red Bank Oil Co.'s No. 1 M. A. Smith, NE cor. NW Sec. 24, Blk. 194, G. C. & S. F. Sur., elev. 2,720 ft. — Top salt 850 ft.; 100 ft. oil in hole 1,468-72 ft.; top pay 1,581 ft.; shut down 1,624 ft.; flowed 350 bbls. daily; pinched in to 25 bbls.
Roxana Petroleum Corp.'s No. 1 Smith-A, Sec. 27, Blk. 194 — Rig.
Roxana Petroleum Co.'s No. 1 J. H. Tippett — Spudding.
W. R. Shankel et al's No. 1 I. G. Yates, CSL SW SE SE Sec. 58, Blk. 1, I. & G. N. Sur., elev. 2,220 ft. — Top salt 425 ft.; 40 ft. oil 1,313 ft.; sulphur water 1,478-79 ft.; water plugged off; shut down.
Simms Oil Co.'s No. 1 M. A. Smith, SW cor. Sec. 103, Blk. 194 — Drilling 410 ft.
Simms Oil Co.'s No. 2 A. J. Devlin — Drilling 343 ft.
Transcontinental Oil Co.'s No. 1 Blackstone & Slaughter, Sec. 29, Blk. 129, F. St. L. Sur. — Drilling 200 ft.
World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 48, Township 8, T. P. R. R. Sur. — Location.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, T. & St. L., elev. 3,245 ft. — Location.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle est., Sec. 123, Blk. 3, D. & P. Sur., elev. 2,912 ft. — Salt water 2,610 ft.; running 5-in. at 2,855 ft.; total depth 2,910 ft.
Pinto Canyon Oil Co.'s No. 1 Fields, 1,760 ft. S & E NW cor. Sec. 74, Blk. 2, D. & P. Sur. — Location.

REAGAN COUNTY

Henshaw & Camp's No. 1 University, Sec. 14, Blk. 49, University Land — Rig shut down.
Texon O. & L. Co.'s No. 1-B University, Group 1 — Top pay 6,284 ft.; shut down for motor 6,590 ft. with 3,800 ft. of 38.7 gravity oil in hole.
Marland Oil Co.'s No. 1 University-Anderson, Sec. 19, Blk. 58, University Land — Location.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W. of NE cor. Sec. 26, Blk. C-18, Public School Land — Spudded 20 ft. and shut down.
David R. Thompson's No. 1 A. A. Eddins — Fishing for bit 1,142 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Public School Land Sur., elev. 3,068 ft. — Shut down 1,610 ft.; tools moved to No. 1 Duff.
World Oil Co.'s No. 1 Duff, elev. 2,753 ft. — Hole full fluid 3,655 ft.; running pipe.

RUNNELS COUNTY

Noble Oil Co.'s No. 1 Simms, Sec. 12, J. J. McHenry Sur. — Fighting cave 2,095 ft.

SCHLEICHER COUNTY

Beavers & Leath et al's No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. — Shut down 400 ft.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. — Sulphur water 2,125 ft.; hole full water 2,160-80 ft.; drilling 2,318 ft.; no report.

STERLING COUNTY

L. Little's No. 1 Fisher Bros., Sec. 1, Blk. T. T. & P. Sur. — Shut down 1,460 ft.
Orr et al's No. 1 Neal Reed, CNL Sec. 15, Blk. 30, W. & N. W. Sur. — Shut down 1,390 ft.
J. P. Williams' No. 3 Clark — Drilling 550 ft.

STONEWALL COUNTY

Peer Oil Corp. and Producers Oil Co.'s (was J. P. Johnson's) No. 1 R. P. Morrow — Drilling 1,585 ft.
R. F. Garland & Co.'s (was McCamey & Zoch's) No. 1 J. Ward, C SW Sec. 153, Mrs. Ward Dobbs Sur., 3 mi. NW of Aspermont — Shut down 3,054 ft.; contract depth.

TAYLOR COUNTY

A. J. Brown et al's No. 1 Henslee, NE cor. Sec. 5, Blk. 4, S. P. R. R. Sur. — Shut down 1,985 ft.; fishing job cleaned up.
Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 23, Blk. 19, T. & P. Sur., elev. 1,904 ft. — Shut down 455 ft.
Gilbert Johnson's No. 1 C. M. Brown, Sec. 1, Blk. 6, T. & P. Sur. — Spudded and shut down.
Morrison & Thompson's No. 1 Mrs. Alice Rose, SW cor. NE Sec. 29, Blk. 19, T. & P. Sur., elev. 1,925 ft. — To run 6-in. by tools; bottom now 2,539 ft.
Owen & Sloan's No. 1 Lattimer, Sec. 14, Blk. 9, T. & P. Sur. — Drilling 2,605 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W ½ NW Sec. 64, Blk. 5, T. & P. Sur. — Set 10-in. at 1,201 ft.; drilling 1,975 ft.
World Oil Co.'s No. 1 J. R. Griffith, SW cor. NE Sec. 32, Blind Asylum Land, elev. 1,747 ft. — Good show oil 3,510-15 ft.; pulling pipe to abandon 3,680 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. — Slight show gas 2,230 ft.; shut down 2,275 ft.

TOM GREEN COUNTY

George Amery's No. 1 Wilkey, C SW Sec. 3, B. A. L. Sur. — Location.
Dullahan et al's No. 1 Jacobs, Sec. 1,011, H. E. & W. T. Sur. — Shut down for orders 632 ft.
Fitzgerald et al's No. 1 Bennett — Drilling 1,110 ft.; no report.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 162, Blk. 11, S. P. R. R. Sur. — Shut down 735 ft.

UPTON COUNTY

Champlin O. & R. Co.'s No. 1 J. L. Lane, SW cor. SE Sec. 3, G. C. & S. F. Sur. — Topped pay 1,920 ft.; bottomed at 1,964 ft.; initial production 40 bbls. per hour, 4 per cent b.s. and water; pinched in to 1 bbl. per hour.
Mark Curtis et al's (was Hultz et al's) No. 2 Giddings, 5,336 ft. S and 6,678 ft. E of NW cor. Throckmorton Co. School Land, League 1 — Moving in tools; spudded water well.
J. M. Hickey's No. 1 W. I. Gormley, 1,650 ft. from SW and SE lines Sec. 7, Blk. 36, H. & T. C. Sur. — Top salt 472 ft.; shut down 1,590 ft. for repairs.
Humble O. & R. Co.'s No. 6 Ricker, SE of No. 5 in Sec. 5, M. S. Denton Sur. — Top salt 595 ft.; drilling 2,255 ft.; 100 ft. oil in hole from 2,205 ft.
Levi Smith and Marland's No. 1 University, C E ½ Sec. 17, Blk. 5, University Land — Shut down 3,725 ft.; 1 bailer sulphur water 3,650 ft.
Marland Oil Co.'s No. 3 Burleson, T. C. Jones Sur. No. 100 — Shut down 4,610 ft.
Wise & Jackson's No. 1 J. H. Porter, SW cor. SW SW Sec. 184, Blk. E — Top salt 1,370 ft.; drilling 3,400 ft.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore est., Sec. 183, J. Mitchell Sur., elev 953 ft. — Shut down 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. — Shut down 2,940 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 82, Blk. A, I. & G. N. Sur. — Shut down 3,010 ft.
East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur. — Total depth 3,190 ft.; cleaning out.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. — Hole full salt water 2,455 ft.; shut down 3,503 ft.
Magnolia Petroleum Co.'s No. 1 Whitehead, Sec. 81, D. G. C. & S. F. Sur., elev. 1,770 ft. — Fishing 2,850 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur., elev. 1,175 ft. — Shut down 3,900 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I. & G. N. Sur., elev. 2,130 ft. — Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 2,801 ft.

WINKLER COUNTY

Amerada Petroleum Corp.'s No. 1 J. B. Walton, SW cor. NW Sec. 48, Blk. 26 — Moving in rig and building road.
Atlantic O. P. Co.'s No. 1 Ida Hendricks, SE cor. W ½ NE Sec. 44, Blk. 26 — Rigging.
Atlantic O. P. Co.'s No. 1 Hendricks, Sec. 34, Blk. B-5, elev. 2,823 ft. — Cemented 6-in. at 2,548 ft.; shut down 2,522 ft.
V. T. Bolin's No. 1 Ida Hendrick, C SE NE Sec. 4, Blk. B-5 — Location.
Cranfill Brothers' No. 1 M. J. Bashara, at cor. Secs. 10, 11, 22 and 23, School Blk. 77 — Moving in material and drilling water well.
Cranfill & Reynolds' No. 1 Ida Hendrick, C SW NW NW Sec. 28, Blk. B-5 — Top salt 1,290 ft.; drilling 2,170 ft.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27, elev. 2,823 ft. — Drilling 2,085 ft.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, NW cor. NE Sec. 43, Blk. B-5, Public School Land, elev. 2,816 ft. — Pocket of gas at 2,500 ft.; blew tools out through rig; estimated 5,000,000 ft. gas; shut down 2,756 ft.; gas increased from 8,000,000 to 15,000,000 ft.; blew tools up in hole; stuck in pipe; putting in new connections.
Humble O. & R. Co.'s No. 2 T. G. Hendricks, SE cor. NE Sec. 34, Blk. B-5 — Drilling 1,180 ft.
Independent O. & G. Co.'s No. 1 J. S. Howe-D, NE cor. W ½ SE Sec. 44, Blk. 26 — Rig.
Independent O. & G. Co.'s No. 1 Hendricks-A, elev. 2,816 ft. — 250,000 ft. gas 2,555-75 ft.; set 8-in. 2,595 ft.; shut down 2,601 ft. (steel line measurement).
Independent O. & G. Co.'s No. 2 Hendricks-A, elev. 2,822 ft. — Cemented 6-in. at 2,475 ft. and shut down.
Liner Drilling Co.'s No. 1 Seth-Campbell, NE cor. Sec. 2, Blk. B-5 — Moving in rig.
Landreth Prod. Corp.'s No. 1 Grisham-Hunter, SW cor. SW NW Sec. 45, Blk. 26, School Land — Rotary; drilling 1,860 ft.
Landreth Prod. Corp.'s No. 2 Grisham-Hunter, SE cor. W ½ NW Sec. 45, Blk. 26 — Shut down 560 ft.; shut down for water.
Landreth Prod. Corp.'s No. 1 Hendricks, SE cor. SW Sec. 29, Blk. B-5 — Spudding.
Mining & Engineering Co.'s No. 1 T. G. Hendricks, Sec. 10, Blk. B-12 — Spudded.
McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. L-12, Public School Land, elev. 2,750 ft. — Top lime 3,262 ft.; 2,000 ft. sulphur water from 3,320-25 ft.; drilling 3,390 ft.
R. S. Matthews et al's No. 1 State, C Sec. 7, Blk. A-57, Public School Land Sur., elev. 3,120 ft. — Top salt 1,623 ft.; shut down to repair engine 3,365 ft.
Murchison Oil Co., Cranfill Brothers and Marland's No. 1 Grisham-Hunter, NW cor. SW Sec. 35, Blk. B-5 — Top lime 2,280 ft.; 8,000,000 ft. gas 2,425 ft.; shut down 2,855 ft. for storage.
Pure Oil Co.'s No. 2 Hendricks, elev. 2,827 ft. — Top salt 1,518 ft.; top lime 2,390 ft.; cemented 8-in. 2,479 ft.; shut down 2,572 ft. for control drilling 2,580 ft.
Pure Oil Co.'s No. 1 Hendricks-B, NE cor. SE, Sec. 34, Blk. B-5 — Rotary; top salt 1,395 ft.; top lime 2,276 ft.; cemented 8¼-in. at 2,284 ft.; standardizing.
Republic Prod. Co.'s No. 1 Grisham-Hunter-A, NW cor. E ½ SW Sec. 45, School Block 26 — Rig.
Republic Prod. Co.'s No. 1 Grisham-Hunter-B, SW cor. E ½ SE Sec. 41, Blk. B-5 — Rotary rig.
Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-A, SW cor. E ½ NW Sec. 45, School Block 26 — Spudded and shut down.
Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-B, SW cor. S ½ SE Sec. 29, Blk. B-5 — Rig.
Roxana Petroleum Corp. and Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Public School Land, elev. 2,921 ft. — Top salt 1,115 ft.; hole full water 1,321 ft.; 10-in. set 1,570 ft.; top pay 2,990 ft.; second pay 3,124-28 ft.; swabbed 115 bbls. July 17; total depth 3,447 ft. (steel line measurement), sulphur water; plugged back to 3,347 ft.; raised pipe to 2,975 ft.; shot with 200 qts. 3,120-3,300 ft.; hole caved in on top of tools; fishing.
Southern Crude Oil Pur. Co.'s No. 3-C Hendricks, SE cor. NE Sec. 33, Blk. B-5, elev. 2,816 ft. — Top salt 1,870 ft.; little gas 2,630-40 ft.; shut down for orders 2,735 ft.; making 2,000,000 ft. gas and 1 bbl. oil; top lime 2,630 ft.
Southern Crude Pur. Co.'s No. 4-C Hendricks — Cemented 8-in. 2,525 ft.; small show oil and gas 2,660-65 ft.; gas increased 2,689-90 ft.; estimated 3,000,000 ft. gas 2,720 ft.; 1½ bbls. oil 2,735-40 ft.; shut down.
Southern Crude Oil Pur. Co.'s No. 1 T-88 Hendricks-B (was No. 1-D), SE cor. NE NW Sec. 4, Blk. B-12 — Top lime 2,616 ft.; top pay 2,785 ft.; drilling 2,857 ft.; flowing 100 bbls. daily by heads.
Southern Crude Oil Pur. Co.'s No. 1-F Hendricks, Sec. 33, Blk. B-5, NE cor. SE — Cemented 6-in. 2,529 ft.; standardized and shut down.
Southern Crude Oil Pur. Co.'s No. 1 T-89 Grisham-Hunter-A, CWL NE SW Sec. 35, Blk. B-5 — Top salt 1,219 ft.; top lime 2,298 ft.; standardizing 2,308 ft.
Texon O. & L. Co.'s No. 1 Central State Bank, SW cor. W ½ SE Sec. 41, Blk. B-5, elev. 2,826 ft. — Top lime 2,340 ft.; set 6-in. 2,340 ft.; 3,000,000 ft. gas 2,460-70 ft. and 2,500-20 ft.; more gas 2,573 ft.; another pay at 2,795 ft.; estimated 25,000,000 ft. gas; blew control head off; running 5-in.; total depth 2,814 ft.; shut down.
Texon O. & L. Co.'s No. 1 Grisham-Hunter-B, NW cor. W ½ SW Sec. 45, School Block 26 — Rig.
Texon O. & L. Co.'s No. 2 Grisham-Hunter-B — Rig.
White Eagle O. & R. Co.'s (was Gibson & Johnson's), No. 1 R. A. Lock, 1,320 ft. W of NE cor. Sec. 30, Blk. 74, NW of discovery well, elev. 2,830 ft. — Total depth 1,875 ft.; cleaning out.
Southern Crude O. P. Co.'s No. 3 T-67 Hendrick-A, C SW NW NE Sec. 4, Blk. B-12 — Top salt 1,540 ft; drilling 2,565 ft.
Southern Crude O. P. Co.'s No. 1 T-67 Hendrick-B, NE cor. SE Sec. 44, Blk. 26 — Junked hole 1,000 ft.; skidded 40 ft. south.
Tidal Oil Co.'s (was L. D. Ladd et al's) No. 1 J. W. Amburgey, C Sec. 24, Blk. B-7, Public School Land — Was completed at 3,447 ft. in June; drilling 3,700 ft.
Southern Crude O. P. Co.'s No. 3 T-68 Grisham-Hunter-A, SW cor. W ½ NW Sec. 35, Blk. B-5 — Drilling 513 ft.
Southern Crude O. P. Co.'s No. 1 T-88 Ida Hendricks-C, NW cor. Sec. 28, Blk. B-5 — Drilling 400 ft.

Late Fields

(Continued from Page 39)

Murchison and Cranfill's No. 1, Section 35, Block B-5, flowed at the rate of 180 bbls. per hour for five hours and was shut in.

In Limestone County, south of Nigger Creek, Reiter-Lewis' No. 1 Ward, Peter Varella Survey, was deepened 5 feet Sunday and made 550 bbls. the first 24 hours. Total depth now is 2,884 feet and 8 feet in the pay.

In Lubbock County, in the South Plains territory, Center Oil Co.'s No. 1 Bowles Ranch, NE cor. Section 21, Zack T. Williams Survey, had a slight show of oil at 1,133-40 feet. The test had a hole full of water at 1,110-20 feet and 10-inch is being underreamed to 1,120 feet.

In Callahan County Empire Co.'s deep well, No. 1 Johnson, has increased to 900 bbls. of oil and 715 bbls. of water daily. Nothing has been done to increase the flow and it is believed the water broke in around the pipe.

Wise and Jackson's No. 1 J. H. Horter, Section 184, C. C. S. D. and R. G. N. G. Survey, Upton County, has 100 feet of oil in the hole from 3,419-24 feet and is 75 feet in lime. The hole is being reduced to a 5-inch hole.

OKLAHOMA

The Little River Pool of the Greater Seminole area was pinched in to a total of 7,156 bbls. for Tuesday morning of this week. The production was divided as follows:

Company and lease—	Wells	Prod.
Amerada Pet. Corp., Nitey	1	217
Blackwell Oil & Gas, Nitey	2	505
Indian Terr., H. E. House	1	108
Dungan	1	107
M. A. House	1	5,014
Nitey	1	118
Reed	1	1,087
Total	8	7,156

Three of the Little River wells have gone dead when entirely pinched in and to revive them, it was necessary to adopt means to permit some of the fluid to flow unrestricted. The companies have connected a half-inch pipe into the casing-head, and this pipe is left open. The wells flow about 125 bbls. daily through this opening.

The new well in the field is the Indian Territory Illuminating Oil Co.'s No. 1 Reed, southeast of the discovery well in Section 1-7-6. The Reed well found the Wilcox sand 4,069-70 feet, and flowed 1,087 bbls. the first eight hours.

The Amerada Petroleum Corp.'s No. 1 Nitey, NE cor. SE NE Section 2-7-6, has a formation topped at 4,062 feet which is thought by some to be Hunton lime and by others to be a lower formation. Samples of this formation have not been correlated yet. If it should prove to be the Hunton lime, the well is running rather low, for this sand was found 20 feet lower than the top of the Wilcox sand in the discovery well.

One of the most important wells in Oklahoma at this time is the wildcat well of T. B. Slick in Section 1-6-6, 6 miles south of the Little River Pool. The Slick wildcat was the source of unusual interest last week, and is reported to have found a hole full of water in a sand thought to be the Wilcox sand found from 3,982-4,002 feet. This well has a great bearing upon the territory to the south of the well.

COASTAL LOUISIANA

HOUSTON, Tex., Sept. 6.—Cook, Wilson Oil Co.'s No. 1 Wilson, Edgerly Pool, Louisiana, is flowing 800 bbls. around 3,400 feet. Gulf Refining Co.'s No. 6 Leschen Moore Lumber Co., Stark Dome, Louisiana, is flowing 1,200 bbls. of oil and considerable water at 4,150 feet. Gulf Refining Co.'s No. 43 Bright Penn, Edgerly, which was flowing 2,000 bbls. on August 31 is down to 1,000 bbls. of fluid, 35 per cent sediment and water, flowing through a half inch choke. Louisiana Land & Exploration Co., formerly known as Border Research Corp.'s No. 1 Sabine, Lake Cameron Parish, Louisiana, was abandoned at 3,331 feet in shale. In St. Landry Parish, Bristol Oil & Gas Co.'s No. 1 Breaux, was abandoned at 3,015 feet and Terre Bonne Gas Co.'s No. 1 Whitman, was abandoned at 2,650 feet.

LOUISIANA

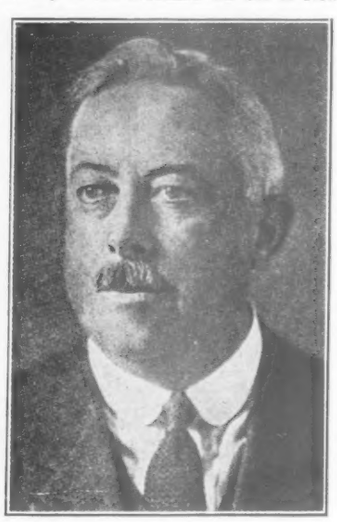
SHREVEPORT, La., Sept. 6.—The Texas Company's No. 8 Herndon, Section 14-21-15, Pine Island Field, Caddo Parish, blew out making an estimated 10,000,000 feet of gas and flowed 2,000 bbls. of salt water and 818 bbls. of oil in 13 hours. The blowout occurred from a formation at 3,588 feet while 8¼-inch casing was being run; total depth of the hole is 3,650 feet. Arkansas Fuel Oil Co's No. 1 Huckaby, Section 14-21-15, Pine Island Field, was bailed in but flowed only salt water with a slight show of gas froma depth of 3,670 feet. This well is on a 10-acre tract offsetting the Herndon and Murray leases which have yielded some of the best wells in the field.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Sept. 6.—Sun Oil Co. and Empire Gas & Fuel Co's No. 2 Talley, three quarters of a mile east of the discovery well of the new Dale Field, at 2,254 feet and 84 feet in the serpentine, bailed a very small amount of oil and is a failure. Sun Co.'s No. 1 Beatty a half mile southwest of the discovery well, topped chalk at 2,360 feet and is a failure. They make the field look like a very small affair.

C. G. BLACK PRESIDENT OF JERSEY SUBSIDIARY

NEW YORK, Sept. 6.—Charles G. Black has been eelcted president of the new Standard Oil Co. of Delaware, subsidiary of the Standard Oil Co. of New Jersey, to have charge of domestic production, manufacturing and marketing. Vice presidents named are George W. McKnight, C. G. Sheffield and Richardson Pratt.



Charles G. Black

F. PHILLIPS AGAINST OUTSIDE INTERFERENCE

NEW YORK, Sept. 3.—Frank Phillips, president of the Phillips Petroleum Co., is against any sort of outside interference in the petroleum industry; but if regulation has to come because the industry is unable to put its own house in order, he favors state over federal control.

He expressed the opinion to The Oil and Gas Journal that the oil industry appears to be due for considerable trouble in the way of political interference.

Mr. Phillips regards West Texas as the biggest menace at present and believes that it is in fact the only serious source of overproduction in the offing.

As one of the leading exponents of aerial transportation, Mr. Phillips deplores the presnt epidemic of "stunt" flying. He has cancelled the aerial meet which was to be held under his sponsorship next October. His company, which has perfected a special fuel for airplanes, made entirely of natural gasoline, is carrying on experiments with airplane engines. Mr. Phillips believes there is considerable room for improvement in present-day engines. He states he will continue his interest in aviation.

Mexican Shipments During July Show a Slight Decrease

By George Blardone

TAMPICO, Mexico, Sept. 2.—Shipments of petroleum from Mexican ports of primary clearance during the month of July totaled 5,138,017, a decrease from the movement in June of only 168,156 bbls. When compared with the movement in July, 1926, however, the decrease is 2,385,341 bbls. The clearances last month were made as follows: From Tampico, 5,094,122; Tuxpam, 43,895. In the subjoined tables the movement credited to "Cuba and West Indies" went principally to Nassau, "for orders," and no doubt from that port much was recleared for the United Kingdom and the Continent.

The imports of Venezuelan crude during the month totaled 606,037 bbls.

The movement in detail follows:

FROM TAMPICO

By Huasteca Petroleum Co.

Sept.	Rig	Vessel, Destination—	Bbls.
1	Ss.	Clement Smith, Galveston	69,351
1	Ss.	Norman Bridge, Houston	*41,266
1	Ss.	E. L. Doheny, New York	*59,719
1	Ss.	Dean Emery, Boston and Providence-N. Y.	†78,936
2	Ss.	S. M. Spalding, Baltimore	64,350
2	Ss.	Gladsbye, New York	*50,685
3	Ss.	O. D. Bennett, New York	*47,881
3	Ss.	M. Luckenbach, Boston	*49,307
4	Ss.	Elisha Walker, Portland	*67,918
5	Ss.	H. G. Wylie, Fall River	*39,907
6	Ss.	J. M. Danziger, Santos and Rio Janeiro	*64,735
6	Ss.	I. C. White, Baltimore	66,723
7	Ss.	Vaarli, New York	*57,447
7	Ss.	Darden, Jacksonville	*50,722
7	Ss.	Mendocina, Providence	*63,017
7	Ss.	C. A. Canfield, Boston	*64,694
8	Ss.	Mantilla, New Orleans	52,286
12	Ss.	Inveravon, Southampton	*57,363
12	Ss.	Mirita, Newark	*55,221
13	Ss.	Inverurie, Southampton	*57,616
13	Ss.	Norman Bridge, Houston	*41,594
14	Ss.	Ashtabula, Southampton	*49,423
14	Ss.	F. H. Wickett, New York	*77,877
15	Ss.	Mevania, Baltimore	68,999
15	Ss.	Cerro Azul, Providence	*78,788
16	Ss.	Fred. Ewing, Baltimore	65,054
18	Ss.	Mantilla, New Orleans	52,828
18	Ss.	Cerro Ebano, New York	*50,729
18	Ss.	F. H. Harwood, Boston	*65,438
20	Ss.	E. L. Doheny, Baltimore	59,575
22	Ss.	R. W. Stewart, New York	*79,899
22	Ss.	O. D. Bennett, Baltimore	*48,156
24	Ss.	Housatonic, Southampton	*50,162
24	Ss.	Meline, Boston	*63,051
25	Ss.	S. M. Spalding, Santos	*63,643
25	Ss.	M. Luckenbach, Baltimore	49,602
26	Ss.	F-Sulphur 6, New Orleans	40,132
27	Ss.	Ardmore, Charleston	74,789
27	Ss.	Elisha Walker, New York	*66,879
28	Ss.	Mantilla, Jacksonville	*51,892
29	Ss.	C. Anderson, New York	*62,868
29	Ss.	Harold Walker, New Orleans	66,817
		Coastwise deliveries	*86,074
		Coastwise deliveries	†22,919
		Bunker deliveries	202,085
		Total	2,828,417

By Mexican Eagle Oil Co., Ltd.

Sept.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Lycia, Argentine Ports	†24,980
5	Ss.	Westerwald, Hamburg (asphalt)	11,567
5	Ss.	Adalla, Hamburg (asphalt)	5,777
8	Ss.	Scholar, Manchester (asphalt)	2,856
9	Ss.	Blair Gowrie, Dunkirk (asphalt)	24,360
9	Ss.	Pearleaf, Marlel, Cuba	*37,926
9	Ss.	San Teodoro, Argentine and Brazil	†37,480
15	Ss.	San Eduardo, Nassau f/o	*32,274
15	Ss.	San Eduardo, Nassau f/o	†20,311
13	Ss.	Spar, Rotterdam and Rouen (asphalt)	34,123
17	Ss.	North Britain, Brazil Ports	†20,045
19	Ss.	Pearleaf, Nassau f/o	*34,507
20	Ss.	San Leopoldo, Nassau	†30,419
20	Ss.	San Leopoldo, Nassau	*28,309
22	Ss.	San Valerio, Nassau f/o	*34,846
22	Ss.	San Valerio, Nassau f/o	†21,764
22	Ss.	Dictator, Rotterdam (asphalt)	38,417
22	Ss.	El Siston, Key West (asphalt)	21,246
23	Ss.	San Ubaldo, Nassau f/o	*32,513
23	Ss.	Troja, Hamburg (asphalt)	8,655
27	Ss.	San Leonardo, Nassau f/o	*46,170
30	Ss.	San Antonio, Pernambuco	*42,290
		Coastwise deliveries	†129,250
		Bunker deliveries	67,630
		Total	797,715

By Transcontinental Petroleum Co.

Sept.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Halsey, New York	64,797
5	Ss.	Malacca, Baltimore	72,724
7	Ss.	Torres, New York	49,612
11	Ss.	Glenpool, Baton Rouge	53,471
11	Ss.	Princeton, Baton Rouge	50,065
12	Ss.	Malabar, New York	73,546
16	Ss.	Clement Smith, New York	69,538
19	Ss.	Hoxbar, New York	65,382
22	Ss.	Matinicock, Baltimore	75,775
23	Ss.	Princeton, Baton Rouge	50,179
23	Ss.	Agwilake, New York	78,930
		Total	704,020

By Mexican Sinclair Petroleum Corp.

Sept.	Rig	Vessel, Destination—	Bbls.
4	Ss.	Harry Farnum, New Orleans	31,855
6	Ss.	Madrono, New Orleans	54,533
8	Ss.	Gene Crawley, Tarafa, Cuba	*29,500
13	Ss.	Harry Farnum, New Orleans	30,614
18	Ss.	Madrono, Philadelphia	52,241
20	Ss.	W. L. Connelly, Havana	*30,448
23	Ss.	Gene Crawley, New Orleans	30,186
23	Ss.	Harry Farnum, Puerto Barrios, C. A.	31,492
		Bunkers deliveries	21,381
		Total	312,250

By Cia. Mexicana Holandesa La Corona, S. A.

Sept.	Rig	Vessel, Destination—	Bbls.
7	Ss.	Pecten, Nassau f/o	56,637
14	Ss.	Marpessa, Nassau f/o	55,862
21	Ss.	Cassimir, United States	45,359
21	Ss.	Maricopa, United States	62,515
30	Ss.	Orange Leaf, United States	34,312
		Bunkers deliveries	50,540
		Total	305,225

By Mexican Atlas Petroleum Co.

Sept.	Rig	Vessel, Destination—	Bbls.
20	Ss.	Frango, New York	57,069
21	Ss.	A. E. Watts, New York	65,842
		Total	122,911

By La Espuela Oil Co.

Sept.	Rig	Vessel, Destination—	Bbls.
17	Ss.	F-Sulphur 6, Freeport	23,584

FROM TUXPAM

By Mexican Eagle Oil Co., Ltd.

July: Coastwise deliveries *43,895

JULY SUMMARY

From—	
Tampico	5,094,122
Tuxpam	43,895
Total July, 1927	5,138,017
Total July, 1926	7,523,358
Decrease July, 1927	2,385,341

DIVISION OF MOVEMENT

To—	
United States	3,387,773
Cuba and West Indies	491,486
Mexican Coastwise	282,138
South America	263,173
United Kingdom	217,420
Continent	122,899
Central America	31,492
Bunkers (to balance)	341,636
Total	5,138,017

CLASSES

Crude	2,066,627
Topped crude	2,154,136
Other refined	428,617
Asphalt	147,001
Bunkers (to balance)	341,636
Total	5,138,017

*Denotes topped crude.
†Denotes other refined.

DEATH OF M. R. SHANER

BUTLER, Pa., Sept. 3.—The death of M. R. Shaner August 26 from a stroke of apoplexy at his home here, takes away another of the pioneer oil and gas men. Mr. Shaner helped to open the old Thorn Creek Field and operated leases at Watters Station. He was also interested in the Hundred Foot development at Petersville in 1890, and had in later years been identified with various Pennsylvania, Ohio and West Virginia oil and gas fields. Mr. Shaner was born in Lancaster Township, Butler County, February 14, 1856. He is survived by one son, George A. Shaner of Tulsa, and two daughters, Mrs. Ralph W. Walker of Butler, Pa., and Mrs. Richard D. Russell of Pittsburgh, Pa.

DEATH OF A. F. COLE

NEWARK, Ohio, Sept. 3.—Arthur F. Cole, 57, manager of the drilling division of the Pure Oil Co., died suddenly in his home. He was born in Marietta, June 24, 1870. He was a classmate and intimate friend of Beman G. Dawes. He followed his profession of civil engineer for a number of years, and when the Pure Oil Co. was taken over by the Dawes interests Mr. Cole was one of the original stockholders. He has since then been a member of the companys organization, being in charge of the Newark offices at the time of his death.

DUTCH SHELL IN RUMANIA

Astra Romana Co. Rumanian subsidiary of Royal Dutch Shell, has concluded an agreement with the Rumanian government for compensation from oil fields destroyed in 1916. Compensation will be paid in 40 annuities on a capital sum of £1,768,954.

Augmenting the Supply of Natural Gas

Pittsburgh Natural Gas Concern Has Had 10 Years' Experience in Manufacture of Producer Gas and Blue Gas

By Henry Clay Adams
Distribution Supervisor, Equitable Gas Co., and Pittsburgh & West Virginia Gas Co.

The Equitable Gas Co., although primarily a corporation supplying natural gas to the Pittsburgh district, owns and operates a manufactured gas plant which, at certain times of the year, produces gas which is mixed with larger quantities of natural gas for distribution. This article has been prepared to give certain information regarding this point.

Location

The plant is located on the Monongahela River, about 20 miles south of Pittsburgh at Elrama in Washington County, Pennsylvania. This location was chosen mainly for the following reasons: First, the proximity of two 16-inch lines which could readily be isolated for the transportation of the manufactured gas to a suitable mixing point without handicapping transportation facilities as to pipe lines for handling natural gas. Second, ideal location as regards water for cooling and condensing purposes. Third, admirable transportation facilities for the handling of coke and coal by rail and water.

Reasons for Existence

Several years ago, due to the demand for gas in the Pittsburgh district, the management decided that certain steps had to be taken to supplement the available gas supply and to prepare eventually for the time when manufactured gas alone would be available instead of natural gas.

It was, therefore, expedient, in as much as the indications were that the natural gas supply was being depleted, that some experimental work should be done to determine what kind of manufactured gas should be made for mixing with the natural gas.

In 1917, a producer gas plant was erected, and it proved to be a valuable adjunct to the gas supply for the Pittsburgh district, especially in winter time when peak loads exceeded the amount of natural gas that was available. By 1920 the condition had not changed materially and three blue gas sets were installed in that year, and in 1923 four additional sets were added.

This company has thus had 10 years' experience in the manufacture of producer gas and blue gas; and, consequently, quite a bit of data has been gathered together regarding operation and operating costs. In addition, a considerable amount of knowledge has been gained as to the practical means of mixing gases.

Description of Apparatus

The present gas manufacturing facilities at the plant are as follows:

There is a producer plant consisting of four generators and the necessary auxiliary apparatus such as scrubbers, coolers and pumps. The maximum hourly capacity of the plant is a trifle more than 1,000,000 cubic feet of 120 B.t.u. gas made from coke.

The water gas plant consists of seven sets complete with waste heat boilers,—these generators are 12 feet in diameter. This portion of the plant includes blowers, coolers, pumps, meters, purifiers and one 500,000-cubic foot holder. The water gas plant has an hourly capacity of close to 1,000,000 cubic feet of 280-310 B.t.u. gas.

A compressor station consisting of three 1,650-horsepower units is located at the plant for use in pumping the manufactured gas to the point where it is mixed with natural gas. Each of these units consists of a Corliss type compound condensing engine which drives two 42 by 60-inch compressors; the total capacity of the station is 1,650,000 cubic feet per hour. This compressing station is, of course, equipped with a cooling system in the form of a large number of pipes submerged in a pond cooler.

Besides the waste heat boilers which supply almost enough steam to operate the blue gas plant, a boiler plant is provided to supply steam for the producer gas and compressing plants. The total capacity amounts to about 2,700 boiler horsepower. The boilers are of the water tube type and are equipped with automatic stokers together with modern coal and ash-handling apparatus.

How Producer Gas Is Made

Producer gas at Elrama is made from coke, steam and air in a continuous process. The steam and air are introduced at all times in certain proportions into the combustion zone of the producer. The air tends to keep the fuel bed in a state of incandescence, while the steam is broken up into its two components, oxygen and hydrogen. The former unites with the carbon in the fuel to form gases while the hydrogen is liberated. The air, too, is broken up into oxygen and nitrogen, the former uniting with the carbon in the fuel while the latter is liberated.

The gases formed are carbon monoxide, (CO), methane, (CH_4), and hydrogen, (H). These are inflammable gases that form the important part of the finished product. Due to the fact that the process is continuous and because there is no outlet other than the mains leading to the distribution system, the nitrogen (N), content of the blast remains in the finished gas. Carbon dioxide, (CO_2), is also present. An approximate analysis of a producer gas is as follows:

	%
Carbon monoxide, CO	24.0
Hydrogen, H	11.0
Methane, CH_4	2.0
Carbon dioxide, CO_2	5.0
Nitrogen, N	58.0
Hydrogen-sulphide, H_2S	Trace
Total	100.0

The heat units per cubic foot of the above gas figure by calculation to be about 122 B.t.u. As a comparison an approximate analysis of natural gas is given below:

	%
Methane, CH_4	81.8
Ethane, C_2H_6	17.2
Nitrogen, N	1.0
Total	100.0

The calculation of B.t.u. of the above gas is about 1,128.

Of late years it has been the custom to manufacture producer gas from coke rather than from coal, because with coal there is always a certain amount of tar distilled out which is exceedingly difficult to handle. Coke on the other hand is composed almost entirely of carbon with very little volatile matter; the result is that no tar is manufactured and the troubles that are present with coal as fuel are eliminated.

How Water Gas Is Made

Water gas is made in an intermittent process by getting the fuel bed of the generator to a high state of incandescence by an air blast and then shutting off the air and forcing steam through the fuel which dissociates the water into its elements of oxygen and hydrogen. The former combines with the carbon of the fuel and the latter is liberated.

The air-blast period is entirely separate from the gas-making period and after it has passed through the set it is discharged out into the atmosphere. Thus the nitrogen which originally is part of the air is discharged and not carried along with the finished gas as is the case with producer gas. The air-blast period is approximately 2 minutes in length, while the gas-making period is from 3 to 4 minutes long. The gas-making period may be described as that time when the steam is being forced through the incandescent bed of fuel, which is usually coke.

An approximate analysis of the gas is as follows:

	%
Carbon monoxide, CO	44.0
Hydrogen, H	51.0
Carbon dioxide, CO_2	4.0
Nitrogen, N	1.0
Hydrogen-sulphide, H_2S	Trace
Total	100.0

The heat units for the above analysis figure out to be about 287 B.t.u. per cubic foot. A combination of a "blast" and a "make" constitute a "run" of which there are approximately 10 per hour per set. There is a waste heat boiler installed in connection with each set; the function of this piece of apparatus is to utilize the energy which is present in the "blast" and "make" gases in the form of heat to generate steam. These gases pass from the generators to combustion chambers and thence through the waste-heat boilers. The heat energy is transmitted to the water which surrounds the tubes through which the gases pass; steam is generated and used for operating the auxiliary apparatus around the water gas plant.

The exhaust steam from the blowers, exhausters and pumps, is piped to the water gas generators for use in gas manufacture. When the amount of exhaust steam is insufficient an automatic regulator feeds live steam as "make up" as additional steam to the exhaust steam for use in the generators.

Additional apparatus consists of coolers, storage holders, meters, exhausters or pumps and purifiers, through which the gas must pass before it reaches the compressors.

Purification of Manufactured Gas

As noted in the approximate analysis, there is a gas present called hydrogen sulphide, (H_2S). This is very obnoxious if allowed to remain in the finished product. When it burns, even though present in small quantities, it gives off fumes which are obnoxious. Moreover, hydrogen sulphide is a bleaching agent and thus can harm draperies and corrode silverware to a marked degree.

It is necessary that gas companies remove this undesirable portion of the gas, which is done by means of purifiers. Most states, very rightly, have rules and regulations stipulating the sulphur and hydrogen content of a gas.

A simple form of purifier can be described as follows: The gas is passed through a series of large boxes in which is placed a material which consists of corn cobs or shavings mixed with iron oxide. The iron has an affinity chemically for the sulphur content of the "raw" gas and thus is the agent whereby the latter is removed. The iron oxide in time becomes "foul" and must be changed. This necessitates the removal of the used material which can be revivified by letting the sun, rain or air act on it, thus oxidizing or reconverting it to its original form as iron oxide. After it is reoxidized it can be used over again several times until its sulphur content becomes so great that the activity of the material is gone. Corn cobs and shavings are used to increase the surface of the mixed material through which the gas passes and to make it more porous.

Elrama gas manufacturing plant of Equitable Gas Co., Pittsburgh, Pa.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

GUM IN GASOLINE

We desire to have a description of a method which can be used for the determination of gum in gasoline and shall thank you if you will give us the same.—H. G. D.

The Bureau of Mines has studied methods for the determination of gum in gasoline and the following is based on their work.

The conditions under which the evaporation proceeds are important, because if there is a free access of air there will be an excess of the gum produced, so special means should be provided which will permit the evaporation to take place in an inert atmosphere. This is accomplished by placing the evaporating dish in an oven to which live steam is admitted. This oven should be equipped with a proper outlet for the steam and vapors, also with a drain to carry off any condensate.

The determination should be made in duplicate and if a steam oven is not available, fairly good results may be obtained by evaporating on a water-bath with the dishes in direct contact with the steam. Final drying may then be done in an air oven at 105 degrees Centigrade.

Weighed glass dishes (porcelain or silica crucibles may be used) of 30 cubic centimeter capacity are placed on the shelves in the oven and 20 cubic centimeter samples of gasoline are added from pipettes. The oven is closed and steam is allowed to enter it, the outlet valves being so adjusted that all the condensate is removed and a small amount of excess steam escapes. After two or three hours the steam is shut off, and the oven is opened. The dishes are transferred to a drying oven of the conventional type, and maintained at a temperature of 105 degrees Centigrade for 24 hours. With many gasolines the drying period can be shortened, particularly if the gum content of the gasoline is low. In any event the drying is continued to constant weight. The weight of gum in milligrams multiplied by five gives the "gum content" in milligrams per 100 cubic centimeters of gasoline.

It is recommended that samples of gasolines containing more than 200 milligrams of gum per 100 cubic centimeters (40 milligrams per 20 cubic centimeter sample) be reduced in volume so that the weight of gum in the dish will not exceed 40 milligrams. A convenient method is to dilute the gasoline with "gum-free" naphtha, and to take for analysis an aliquot part of the solution.

NONCHATTER MOTOR OIL

Please advise me what is added to motor oil to produce a nonchatter effect.—V. W.

Oils of this type are compounded with different kinds of soaps and oils. Aluminum stearate and the oleate are both used. The various grades of lard oils and other animal fatty oils, together with the fats are also compounded for this purpose.

ICHTHYOL

Will you kindly give me some idea about ichthyol, as to its characteristics, how it is made and what is it used for?—D. C. Y.

This is an oil, derived from special kinds of crude oil and certain shales, which is soluble in water. It is obtained by distillation, sulphonated, and neutralized with ammonia or caustic soda. It is reported to have a therapeutic value in the treatment of burns, rheumatism, and inflammations of the skin. Ichthyol has a peculiar odor somewhat like that of crude oil but distinctly sulphurous and probably the odor is due to certain forms of sulphur of the mercaptan group.

Oils which are claimed to yield ichthyol always contain large quantities of sulphur; one is reported to contain 2.5 per cent. The vapors color concentrated sulphuric acid violet to blue. The product is soluble in water with a brown color and with fluorescence. It is also soluble in equal parts of alcohol and ether.

BOMB FOR TESTING MOTOR FUELS

Have you any information about the bomb method for testing the knocking value of gasoline? I am told that this is a Government method but I have failed to find a description of it and will be pleased to have your help.—T. S. R.

We have no knowledge of this method being described in the Bureau of Standards or the Bureau of Mines publications. You may have reference to the bomb method which it is reported is being developed by the Navy Department.

This bomb is essentially a vertical steel cylinder closed at each end, the plate on the top having a portion of the metal removed so as to leave a thin diaphragm about 2 inches in diameter and five-thirty-seconds of an inch thick. Liquid fuel is injected into this bomb and then compressed air is introduced until a pressure of several hundred pounds has been reached. The temperature is controlled by heating coils in a jacket surrounding the bomb and, after a short wait to allow the fuel to be completely vaporized and mixed with the air, a charge is fired by means of a spark plug.

If the temperature of the charge is high enough and the pressure is also high enough the charge, when fired, will detonate and, in case of detonation, the diaphragm in the top of the bomb gets a sudden blow and a steel ball resting on this diaphragm is thrown up in the air. The more severe the detonation the greater the height to which the steel ball goes and the square root of this height is taken as the measure of the intensity of the detonation.

There is not at present any substitute for the engine test as a means of estimating the tendency of fuels to knock, but the engine test requires rather expensive equipment and, particularly in the case of the device used at the bureau, takes quite a little time and a good deal of fuel. The bureau's regular test takes about 5 gallons of fuel and about half a day to complete.

If bomb devices can be developed which give consistent results and results that agree reasonably well with those obtained in engine tests, it will be a great convenience as well as a saving in expense since a few spoonsful of gasoline is sufficient for making a bomb test.

So far this test is just being studied but it has been found that with two or three different gasolines the relative intensity of detonation under like conditions as regards pressure and temperature agreed pretty well with the tendency of these particular fuels to detonate as judged by the regular engine test.

Thus far the results obtained with the bomb for a single fuel under definite temperature and pressure conditions are liable to vary considerably in successive tests so that it is necessary to take the average of a number of trials. Such average results seem to be quite definitely satisfactory.

SOAP FROM PETROLEUM

I should like to know something about the possibilities of making soap from petroleum by using caustic soda as the saponifying agent in conjunction with some catalyst?—R. B. K.

A process was announced in 1885 by E. Schaal for the conversion of petroleum distillates into saponifiable acids. The distillate was to be treated with oxygen at the boiling point, under a reflux condenser, in the presence of a small quantity of caustic soda or lime. The acids produced combining with the alkali to form soaps, which were skimmed off and replaced with fresh alkali. Or the oil may be mixed with soda and an oxygen carrier, such as copper sulphate, and powdered pumice, fullers earth, etc., and the half-dry porous mass heated and blown with air. As far as known this process has not attained any success, partly because of the expense and because of the inferior quality of the product.

A similar process, by Boleg, required that the oxidation take place under compressed air and was accelerated by the presence of a strongly alkaline resin soap. The compounds formed by this, and the other process, are soluble only to the extent of two-thirds in light gasoline and form soaps with poor lathering properties.

QUANTITY OF OIL BEING OBTAINED FROM COAL

What quantity of oil is being extracted from coal and where is the plant located?—D. T. G.

The plant for the conversion of coal to oil, under the Bergius patents, is located at Merseburg, Germany. There are large deposits of lignite close and the same company is extracting nitrogen from the air, manufacturing large volumes of hydrogen for the production of ammonia and methanol or methyl alcohol. The hydrogen is produced at a reduced cost by blowing water gas over lignite instead of the more expensive coke.

A very large plant is in course of construction by a force of 15,000 men, and while the exact production cannot be estimated at this time, it is believed that the capacity may approach 350,000 tons annually of oil.

The coal is milled in fine powder to which 30 per cent coal tar of oil residues are added, thus forming a thick paste. This mixture is consigned to a reaction chamber and heated almost to glow, at from 750 to 930 degrees Fahrenheit, and hydrogen is introduced while pressure of around 200 atmospheres is maintained. The carbon (coal) in its pasty state takes up the hydrogen to form the oil. A ton (1,000 kilos.) of coal yields about 490 kilos. oil, 210 kilos. gas, and 300 kilos. pitch residue. The gas is supplied to consumers, and the pitch also finds commercial application. The first-run oil is then distilled, an amount of 490 kilos. yielding 350 kilos. fuel oils, 60 kilos. burning oil, and 50 kilos. lubricating oils. The motor fuel can be further refined, an amount of 350 kilos. yielding 150 kilos. gasoline and 200 kilos. Diesel oils. It is striking to compare with this yield a recovery of only 30 kilos. tar and 10 kilos. light oil from a ton of coal subjected to low-temperature distillation. It is important to emphasize that the Bergius process, and, indeed, the Franz Fischer process of synthesising carbon monoxide and hydrogen from coal gases, both utilize coal raw material completely, or almost completely, in their operation. Lignite, or brown coal, is inherently better fitted for production of oil, as it is geologically of more recent origin than real (black) coal.

LOSS BY EVAPORATION AND FIRE

What is the loss by evaporation of oil from tanks and what is the loss by tank fires? What are the best means for preventing both?—A. C.

An estimate, believed to be conservative, places the loss of oil each year between the well and the shipment of the finished gasoline from the refinery to amount to 7.5 per cent of the crude production. A large part of this loss is by evaporation. Dr. L. Schmidt, United States Bureau of Mines, has made a study of the loss by evaporation from tanks and has concluded that the loss from refinery run down tanks is 1.8 per cent and the loss from storage, based on a three months storage for the lighter products, is 2.5 per cent.

In the storage tank evaporation can occur only when fresh air or dry gas is in contact with the surface of the oil. Air or dry gas acts much like a sponge and becomes saturated with the hydrocarbon vapors, and of course these are largely of the gasoline range. Movement of the air and vapor takes place according to wind velocity and change of temperature. The movement is known as breathing, largely due to the expansion and contraction.

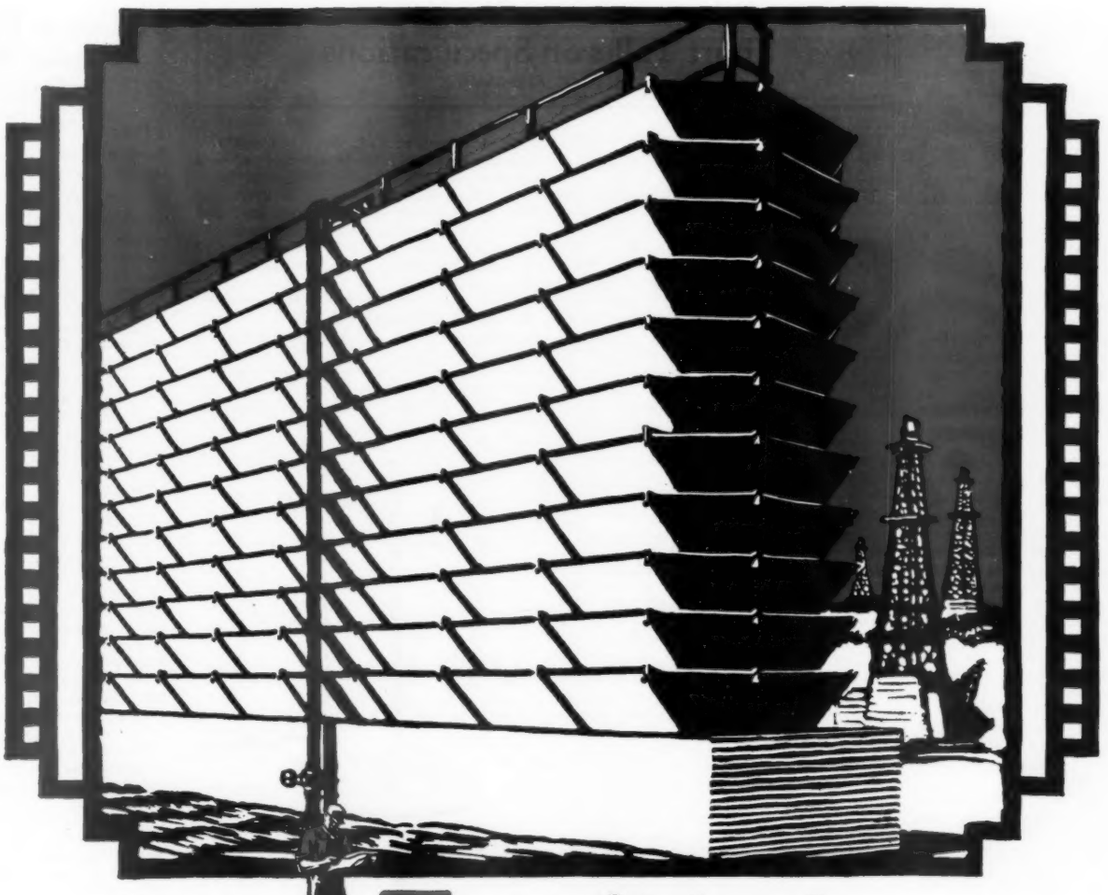
We have no information showing the fire loss for tank fires alone. The annual fire loss to the petroleum industry is approximately $12,700,000 from all units. The tank fires in California, early in 1926, caused a loss of over 8,000,000 bbls. of oil.

Remedies for checking loss by evaporation and fire include the all steel vapor tight and well vented tank. Water tops and insulation also help. It is well established that the all steel tank, when maintained in good condition, is reasonably safe from lightning. There are many more or less elaborate systems for protecting tanks from lightning but these have not been in service long enough to demonstrate that they have a 100 per cent value.

WELL LOCATIONS IN SEMINOLE DISTRICT

What area is covered by a well in the Seminole Pool, and what is the distance between wells?—P. C. B.

The common practice in the Seminole district is to locate a well in the center of 10 acres. This gives four wells to each 40 acres. The center of 10 acres fixes the distance from the line at 330 feet or 660 feet between wells.



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TEST ETHYL ALCOHOL AS FUEL FOR MOTORS

Recent French tests on the use of ethyl alcohol and alcohol derivatives has shown favorable results. These tests were made under the auspices of the Automobile Club of France and included the use of five fuels, four of which had an alcohol basis. The fuels tested were the French national fuel, ethyl alcohol, ketolalcohol and Cosmoline and one was a heavy petroleum or coal oil distillate used in a light internal combustion engine operating on Diesel cycle.

The French fuel (carburant national), which was introduced on the market some years ago, is already well known. It is composed of 50 per cent of "tourists grade" gasoline and 50 per cent anhydrous alcohol (99.7 per cent). Anhydrous alcohol is used to obtain a sufficiently stable mixture, gasoline and the ordinary commercial alcohol being imperfectly miscible.

The vehicle entered by the Syndicate of Alcohol Manufacturers was a 10 horse power Talbot sedan with four-cylinder sport-type engine, with a compression ratio of approximately 5 to 1. A check on the fuel consumption during one stage gave a consumption at the rate of 14.7 miles per gallon for an average speed of 37.5 miles per hour and poor roads. Operation was excellent on the whole.

Ketol is a product of complex and variable composition according to the method of production employed, the basic raw material being cellulose. In principle, any waste material of vegetable origin, such as wood, straw, reed grass peat, etc., may be used. In practice, the plant of the Ketol company in Ris Orangis uses sawdust.

The Ketol company had entered in the trial a Chenard & Walcker sedan with 10 horse power engine. The fuel employed was a mixture of equal parts of 80 per cent alcohol and ketol. Nothing was changed on the engine and only the carburetor was readjusted, which was evidently necessary in view of the higher density and the lower calorific power of the ketol as compared with gasoline.

The Economical Fuel Co. had entered two vehicles in the trials, one a 10 horse power four-cylinder open Peugeot, the other a Rochet-Schneider light military truck with 16 horse power engine. The former was operated on a Cosmoline-alcohol mixture, the latter on a Cosmoline-gasoline mixture. Cosmoline-alcohol is a mixture of 65 per cent commercial alcohol and 35 per cent Cosmo-naphtha; Cosmo-gasoline contains 50 per cent of low-grade gasoline and 50 per cent Cosmo-naphtha. The composition of the Cosmo-naphtha is as follows: Naphthalene oils, 75 per cent; solvents for same composed of 16.25 per cent benzol, 6.75 per cent cresols and 2 per cent nitrobenzene.

Obesrvation of the two vehicles using these fuels follow:

1. Even with the Cosmoline-alcohol, the calorific value of which is slightly less than that of gasoline, no appreciable loss in power was noticeable. Starting, acceleration and pickup are comparable with the corresponding qualities of a vehicle operated on gasoline.

2. In view of the composition of the Cosmo-naphtha and the pronounced antidetonating properties resulting therefrom, it is possible to ascend grades at low speed under full throttle without detonation.

3. Examination of the spark plugs, valves and cylinder and piston heads, both on the road and upon dismounting of the engine at the completion of the trial, showed that combustion of the heavy products was sufficiently complete and that the carbon deposits were comparable with those obtained when operating on gasoline for an equal length of time.

Short Talks on Specifications

By W. T. Ziegenhain

FLASH AND FIRE POINT TESTS FOR LUBRICANTS AND FUEL OILS

The flash point of an oil is the temperature at which it will momentarily ignite, when a flame is passed near its surface. The flash is due to the accumulation of light oil vapors that distill off as the temperature is raised. Just as soon as the temperature is increased enough to cause this accumulation of vapors in a sufficient concentration to ignite, when a flame is passed over the surface, a small explosion occurs and at that point the temperature of the oil is recorded as its flash point.

The fire point is determined by continuing the test and is the temperature at which the oil will ignite and continue to burn. The fire point is necessarily higher than the flashpoint, since at the fire point the temperature must be high enough to distill off enough vapor to not only ignite but support combustion of the oil.

Laboratory Equipment

The Cleveland Open Cup is used in these tests. It has been adopted almost exclusively by the oil industry. The accompanying chart shows the laboratory equipment. It consists of a heavy iron cup, thermometer, asbestos board and some means of heating the cup. For convenience the apparatus is assembled as shown. This apparatus is used for testing all oils having a flash point of 175 degrees Fahrenheit or higher and includes most lubricating oils, fuel oils, road oil, gas oil, etc. The type of apparatus and the test procedure used in determining the flash and fire points of kerosene, furnace oil and others will be outlined in a future issue of The Oil and Gas Journal.

When using the Cleveland Open Cup, the test procedure specifies that the thermometer be suspended as shown so the bulb rests one-fourth of an inch away from the bottom of the cup, at a point half-way between the center of the cup and the rim. The oil to be tested is poured into the cup to a given mark. The heating is started and regulated so the temperature of the oil is raised between 20 and 30 degrees per minute. When the temperature is approximately 100 degrees below the expected flash point the rate of heating is decreased until the temperature rises only from 9 to 11 degrees per minute. When the temperature comes within 50 degrees of the expected flash point, a gas flame about the size of a grain of wheat is passed over the surface of the oil, level with the rim of the cup. This is done once with each 5-degree rise in temperature.

The thermometer reading at which the oil momentarily ignites is recorded as its flash point. To make the fire test, the heating continues and the flame is passed over the surface at each 5-degree rise. The temperature at which the oil takes fire is recorded as the fire point.

Importance of Test

These tests are of importance in the handling of fuel oils, from the standpoint of safety, but are of little importance in the case of lubricants. Many times it is necessary to heat fuel oil to reduce its viscosity in order to satisfactorily pump it. This is a common practice in winter. If the fuel oil could flash or catch fire at the temperature needed to handle it, vapor-tight equipment would be needed and its handling would be somewhat dangerous.

In the case named, the flash and fire specifications are made for the purpose of safety and is set at a minimum. Some times a flash specification is given, as for instance on Diesel engine fuel and furnace oil, which sets a maximum so the oil will readily ignite in the cylinder of the engine or in the automatically-lighted furnaces.

The flash specification on lubricants is important only for the purpose of safety. But too much stress is often laid to a difference of a few degrees. Except where heavy lubricants are used in extremely hot engines, free of ventilation, is the flash and fire specifications ordinarily essential. Practically all lubricants now on the market have a wide margin of safety. Furthermore, a lubricant does not ordinarily retain its original flash and fire points and this is particularly true of automobile motor oils. Crankcase dilution materially reduces these after a few hours of use. An equilibrium is gradually set up as dilution tends to continue, for the lighter fractions of the oil contaminating the lubricant distill off at the temperature of the hot motor and a relatively low, somewhat constant flash point and fire point are maintained throughout the balance of the time the lubricant is in use.

SUNBURST REFINERY CONTINUES OPERATIONS

GREAT FALLS, Mont., Sept. 3.—The financial difficulties of the Julian Petroleum Corp. of California will in no way affect the refinery operations of the Sunburst Oil & Refining Co., according to an announcement here by L. C. Stevenson, president of the company. The Julian corporation last year entered into an agreement with the Sunburst company to purchase the latter's refinery, which is located here.

A payment of $150,000 was made by the Julian corporation at the time the agreement was made. The corporation has failed to make the other payments in accordance with the agreement and the original payment has been forfeited. The Sunburst company will continue to operate the property as it has in the past.

Decline in Ford Output Factor in Gasoline Market

Data which will be of interest to refiners and marketers of gasoline and lubricating oils are contained in the report of the Department of Commerce which shows that the production of passenger cars and trucks in the United States and Canada decreased 2,800,000 cars in the first seven months of 1926 to 2,428,472 cars the first seven months of this year.

This situation in the automobile industry has been reflected in the demand for gasoline and lubricating oils. The demand for both these products this year has shown a general increase over last year, the increase in the demand for gasoline being approximately 11 per cent in the United States. However, many oil companies at the first of the year anticipated an increase of from 12 to 15 per cent and the fact that their predictions have not materialized has been a factor in the low prices prevailing for gasoline.

The reasons advanced for the decrease in the output of cars generally agree that the main explanation lies in the curtailment of the operations of the Ford Motor Co. As is generally known, the Ford production up to August 1 had been about 40 per cent of the 1926 output for the corresponding period. Since August 1 no cars have been manufactured at the Ford plants.

Statisticians of the automobile industry estimate the Ford output by comparing the reports of the Department of Commerce and the national Automobile Chamber of Commerce. The first reports included the output of all companies but does not segregate the information by companies. The National Automobile Chamber of Commerce report includes all companies except the Ford Motor Co. By subtracting the data contained in the two reports a rough estimate of the Ford output is obtained.

The following table summarizes these data:

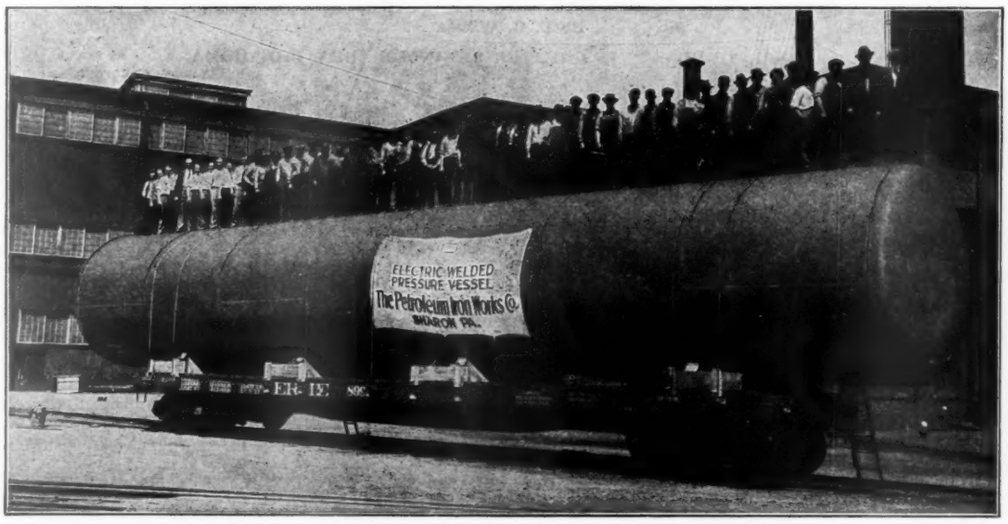
	1927 Dept. of Com.	Chamb. of Com.	Ford Output
January	249,607	187,282	62,325
February	317,420	251,137	66,283
March	410,091	327,489	82,602
April	422,388	342,820	79,568
May	421,382	339,923	81,459
June	333,191	298,335	34,856
July	274,393	271,154	3,239
Total	2,428,472	2,018,140	410,332
	1926		
January	316,091	191,940	124,151
February	373,269	237,037	136,232
March	445,102	290,985	154,117
April	452,025	293,310	158,715
May	442,145	285,593	156,552
June	402,123	265,882	136,241
July	369,602	217,263	152,339
Total	2,800,357	1,782,010	1,018,347

Should the new Ford car be placed on the market within the next month and meet with popular approval it is expected that the sale of new cars over the last quarter of the year will show an increase over the same period last year.

MOTOR SUCCEEDS HORSE ON FARMS IN MONTANA

GREAT FALLS, Mont., Sept. 3.—Statistics gathered this year so far by state authorities in Montana show that practically all work on the farms of this State is now being done by motor instead of horse.

The farmer is granted a refund of the state tax on gasoline sales where his purchase is used for tractors on farms, and the amount of refund so far has reached the sum of $45,543 this year. This only means from the first of March last, for the new tax law was not in operation before that date.



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Seminole Gasoline Output Large

Present Production of 13 Companies Now in Excess of 500,000 Gallons Daily. Unusual Operating Conditions

By C. O. Willson

The Greater Seminole producing area in Oklahoma, which for several months has been the largest single crude oil producing section in the United States, now takes first rank in the manufacture of natural gasoline.

The present natural gasoline output of the area, which includes what are known as the Seminole, Earlsboro Searight and Bowlegs Pools, is in excess of 500,000 gallons daily. The crude oil production at this time is less than 450,000 bbls., which means that more than a gallon of natural gasoline is being manufactured for every barrel of crude oil produced.

Unlike the crude oil production situation in the Seminole area, the trend in natural gasoline manufacture is upward, a condition which will continue for the immediate future, at least. Plants now under construction will probably boost the production to around 600,000 gallons daily within the next two weeks.

Just what the area holds in regard to natural gasoline output 3 to 12 months in the future is problematical. As in the crude oil producing end, there are observers who have a pessimistic viewpoint as to the probable future of the field in natural gasoline output. Predictions are heard that there shortly will be more plant capacity than gas with which to operate. Others expect the output of the field to increase to around 1,000,000 gallons a day before there is natural decline in the available gas supply. These varying views will be discussed in a later issue. It is sufficient to say here that the one of many predictions which proves to be correct in regard to the decline in crude oil production of the Seminole area will also apply to the manufacture of natural gasoline.

Due to the unusual situation existing in the field in regard to crude oil production, it is probable that the natural gasoline output will follow the crude oil production more closely than it has in other pools. This is largely due to the use of the air and gas lift in the production of crude oil. As is generally known, the Seminole Field has witnessed the first major application of air and gas lift in the operation of wells. This practice has added greatly to the flush production of the field. With no precedent upon which to gauge the future trend, varying opinions are expressed as to the ultimate crude oil production of the field. The gasoline manufacturer in his operation shares in this uncertainty.

Air and Gas Lift

The use of air and gas have both had their effect on natural gasoline manufacture. When air has been used as the medium for lifting the oil in the wells it has meant, in most cases, that the gas accompanying the flow of crude oil has been dissipated in the atmosphere. Air and gas are not a desirable mixture in the operation of gasoline plants and, in most cases, the operators and manufacturers have found it expedient to waste the latter when the former was present. Thus the use of the air lift has tended to decrease the natural gasoline output.

At the same time the use of gas as the lifting medium has very materially added to the total output of the natural gasoline plants. As has been explained in articles appearing in The Oil and Gas Journal, there are different methods of using the gas lift in producing crude oil. This variance in methods is generally reflected in the volume and gasoline content of the gas delivered to the plants.

In general, however, the use of the air lift has meant the returning of residue gas from the plants to the wells in a recycle procedure, the continuity of which is only limited by the amount of gas wasted in the combined operation. From the gasoline manufacturer's standpoint, it, of course, means a larger volume of gas than is obtained in other fields, where the plants take care of the natural flow of casinghead gas from the wells without any recycling. In recycling the residue gas from the plants in the wells, the gas, through contact with the crude oil in the wells, becomes saturated with gasoline fractions from the light ends of the crude. This recycle gas, as just stated, varies in gasoline content, the difference apparently being largely dependent on the method of operating the gas lift.

The casinghead gas in all the pools has a relatively high gasoline content. In the case of new wells flowing naturally, tests have shown as high as nine gallons of gas per 1,000 cubic feet of gas. The average is estimated around four or five gallons. Most of the wells, when they are first brought in, have a large flow of gas. One instance is reported where the wells around 10,000,000 cubic feet of gas test eight gallons. Due to the large amount that is recycled, the average for the field is now estimated to be around three gallons. One of the major manufacturers has a plant which averages 2½ gallons and another plant with an average of 3½ gallons. More residue gas is recycled in the first plant.

Three Types

Three types of plants are operated in the field. These are compression, absorption and a combination of the two. To many the outstanding feature in the Seminole Field, from the natural gasoline end, has been the "comeback" of the compression method of manufacture. This, of course, has been primarily due to the demands of the crude oil departments of the companies. So important has the application of the gas lift become in the flowing of the wells that the requirements of that phase of the field's operation take preference over the natural gasoline end.

However, several manufacturers have been agreeably surprised with the results they have been able to obtain with their compression installations. New methods and equipment have added greatly to the possibilities of the original means of extracting gasoline from gas and it is believed by many that, based on the results obtained in the Seminole area, the simple compressor type of installation which has been considered obsolete for several years will again be viewed with favor by many manufacturers.

In the Seminole Field these compressor installations operate either with or without absorption units. When operated alone the gas is gathered from the wells in the usual manner. The gas is then brought to the desired pressure in the compressors. Some manufacturers condense out part of the gasoline at the low stage. Then, at the high stage, the bulk of the gasoline is obtained. The residue gas at the desired pressure for the gas lift is then returned to the wells. This cycle of operation is varied to meet the requirements of field and plant conditions. The large new type engines and the improved condensing equipment, coupled with stabilization when necessary, have enabled the manufacturers to secure large yields of practically any desired specifications. In brief, this operation consists simply in removing gasoline from the wet gas as it comes from the wells and returning it dry in order to flow the wells. Enough gasoline is being obtained in many cases to cover all operating costs with a satisfactory return on the investment.

Compressor Units

There are gas compressor units in operation in the field which do not provide the equipment necessary to remove the gasoline from the gas. The low prices which have prevailed for natural gasoline during the past few months, lack of facilities to transport the finished gasoline from the leases to railroad connections and the fact that several producing organizations do not manufacture and sell natural gasoline are largely responsible for this condition. Should the gas lift prove feasible in operating the wells for a long period of time it is certain that the general practice will be to remove the gasoline from the gas.

In this connection one manufacturer has recently entered into an agreement with a producing organization by which the former furnished all the equipment necessary for the operation of the gas lift on the latter company's leases and, in return, receives whatever gasoline is obtainable from the gas.

In addition to the natural gasoline from the plants the field is producing considerable drip gasoline. One company has approximately 500,000 gallons of this gasoline in storage. The bulk of this gasoline comes from the gas-lift installations where no equipment is provided to condense out the gasoline. When the casinghead gas is brought to a pressure which varies from 150 to as high as 1,200 pounds for gas-lift uses, the light fractions of the gasoline in the gas are often condensed and collect as drips in the pipe lines and equipment around the compressors.

In some cases this drip gasoline is being collected. It is "wild" product and has to be rerun to obtain gasoline meeting the usual commercial grade requirements. At other leases no attempt is made to save this drip gasoline which is mixed with the crude oil in the flow tanks.

Combination Plants

In the combination compression and oil absorption installations the oil absorption division is operated in the conventional manner. The absorption units are operated at the usual low pressures. The residue gas is then available for the gas lift in some cases. Some of this residue gas is returned to the leases as fuel for boilers and other uses. Some agreements provide that the residue gas be returned to the owners, who have their own compressors to operate their wells. In other cases this residue gas is mixed with the gas from that part of the plant which operates as a compression unit in the manner just described.

In addition to the compression and the combination compression and oil absorption plants there are a few strictly oil absorption plants. The operation of these plants and the agreements between the producers and natural gasoline manufacturers are similar to those found in other fields.

Outside Gas

In addition to the gas obtained from the oil wells, a considerable quantity of dry gas is being brought into the field from outside areas. This gas is needed at many leases for the gas lift to supplement the supply available in the field. This outside gas is important to the gasoline manufacturer because in the recycling

(Continued on Page 160)

GASOLINE PLANTS IN GREATER SEMINOLE AREA, OKLAHOMA

Name of company and field location—	Type of plant*	Daily capacity (gals.)	Approximate daily output (gals.)
Amerada Petroleum Corp.:			
NE Section 16-9-5	Absp.	20,000	17,000
SW NE Section 23-9-6	Comp.	4,500	2,000
SW NW Section 15-8-6	Absp.	15,000	15,000
Barnsdall Oil Co.:			
NE NE Section 15-9-5	Comp.	40,000	Bldg.
Carter Oil Co.:			
NW SW Section 35-9-6	Absp.	17,000	17,000
SE SE Section 15-9-6	Absp.	60,000	60,000
NW SW Section 34-10-6	Absp.	40,000	40,000
Crosbie Oil Co.:			
SW NW Section 9-9-5	Absp.	15,000	Bldg.
Empire Gasoline Co.:			
NW SE Section 24-9-6	Absp.	36,000)	
NW NE Section 34-9-6	Comb.	20,000)	
W ½ SW Section 14-8-6	Comb.	30,000)	105,000
SE NW Section 15-8-6	Absp.	15,000)	
S ½ NW Section 13-8-6	Absp.	15,000)	
Forrest E. Gilmore Co.:			
NE NW Section 23-8-6	Comp.	10,000	9,000
SW NW Section 13-8-6	Comp.	10,000	8,000
SE SE Section 10-8-6	Comp.	10,000	8,000
SW SE Section 9-8-6	Comp.	10,000	Bldg.
Gypsy Oil Co.:			
C NW Section 16-9-5	Absp.	30,000	15,000
Independent Oil & Gas Co.			
SE NE Section 26-9-6	Comb.	25,000	15,000
Magnolia Petroleum Co.:			
NW SE Section 10-9-5	Comb.	10,000	7,000
Pure Oil Co.:			
NE SW Section 26-9-6	Comb.	20,000	20,000
SE NW Section 14-8-6	Comb.	30,000	30,000
Roxana Petroleum Corp.:			
SE NE Section 16-8-6	Absp.	30,000	18,000
Sinclair Oil & Gas Co.:			
SW NW Section 35-9-6	Absp.	85,000	80,000
NW NW Section 35-9-6	Comp.	10,000	10,000
NE NE Section 22-8-6	Comp.	30,000	30,000
SW NE Section 10-8-6	Comb.	100,000	Bldg.
Victor Gasoline Co.:			
SE SW Section 10-8-6	Comb.	10,000	9,000
SW NE Section 11-9-5	Comb.	10,000	9,000
SE NW Section 10-9-6	Comb.	10,000	8,500
Total		767,500	532,500

*Absp.=Absorption. Comp.=Compression. Comb.=Combination absorption and compression.

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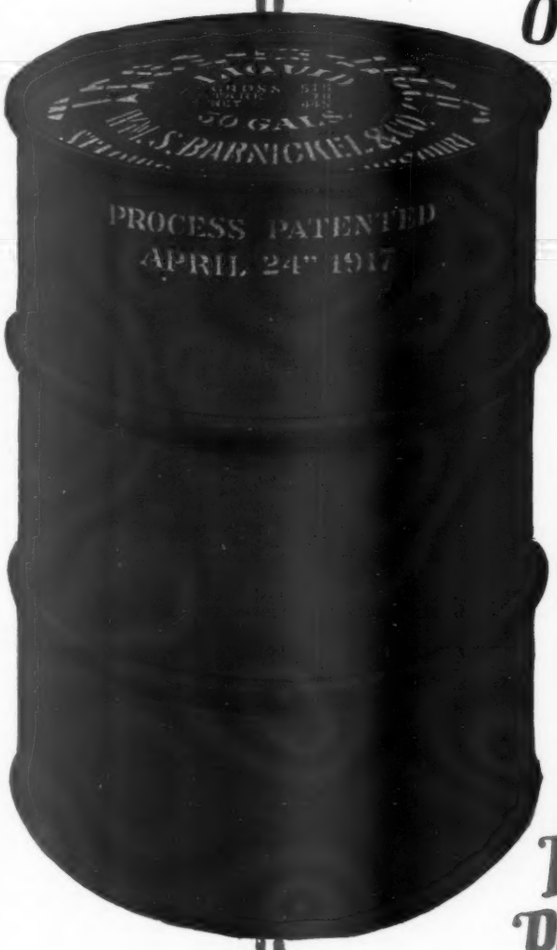

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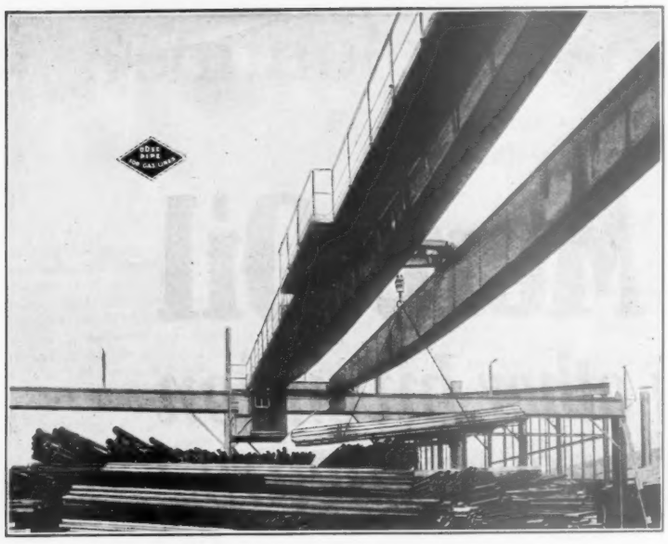

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This workman, when asked if the parts of Ford Tribloc Chain Hoists withstood the hammering and driving incident to renewing load chains, remarked "I've never broken one yet!" With that he brought his 2-pound hammer down on the internal gear with all the strength in his sinewy arm. Nothing happened, except that the hammer made a slight dent in the surface.

Ford Tribloc Chain Hoists are made to such high standards in every detail—from the selection of the metal to the final tests of the finished hoists—that thousands of Triblocs have been bought for the use of each of many large corporations.

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Cost more to make Cost less to use ! TRIBLOC CHAIN HOIST

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Bailey County

Humble Oil & Refining Co.'s No. 1 W. H. Fuqua, C of east half of Section 117, Block A, Melvin, Blum & Blum Survey.

Wheeler County

Hatcher and others' No. 1 J. Hatcher, C of NE of SW of Section 80, Block 23, H. & G. N. Piney Oil Co.'s No. 1 M. E. Ackley, C of NW of NW of Section 20, Block 24, H. & G. N.

NORTH CENTRAL AND WEST TEXAS FIRST REPORTS

Archer County

Guy Brown's No. 1 Mrs. Anna B. Wallace, 200 feet north and 400 feet east of SW cor. of Section 11, League 3, Denton County School Lands, A-117. C. P. Burton and others' No. 1 Parrish Brothers, 150 feet south and west of the NE cor. of Lot No. 7, Section 98, A. T. N. C. L. Camp Oil & Gas Co. and W. D. Hill's No. 1 H. S. Griffin, 1,170 feet south and east of the NW cor. of Section 20, Palo Pinto County School Land. R. E. Carter's No. 1 L. F. Wilson-H, 150 feet north and west of the SE cor. of the southwest 40 acres of the east 160 acres of the north 320 acres of Section 112, A. T. N. C. L. Frank Darr and others' No. 1 Dr. A. B. Edwards, 150 feet south and east of the NW cor. of Section 26, Lulu Platt Hunt Subdivision. P. F. Gwynn and Reese Carter's No. 2 L. F. Wilson, 150 feet north and west of the SE cor. of the NW of the SE of the Thomas Toby Survey, A-646. Barkley-Meadows and others' No. 1 W. L. Anderson, 2,790 feet north and 3,180 feet east of the SW cor. of the William Spavin Survey, A-371. Bridwell & Heydrick's No. 1 Abercrombie and Taylor-C, 450 feet north and east of the SW cor. of Section 44, J. W. Harris Club Ranch Subdivision. C. P. Burton and others' No. 1 W. R. Farmer-A, 150 feet north and west of the SE cor. of the north 75 acres of the W. R. Farmer 236-acre tract out of the J. Poitevent Survey No. 1, A-347. C. P. Burton and others' No. 1 W. R. Farmer-B, 150 feet south and east of the NW cor. of the east 20 acres of the west 40 acres of the S half of Section 2, North Anderson Ranch Subdivision. J. Dixon's No. 1 M. Phillips, 200 feet north and east of the SW cor. of the west 20 acres of the east 60 acres of the M. Phillips 220-acre tract and located in B. B. B. & C. Survey No. 6, A-825. S. McGregor's No. 1 W. R. Farmer, 150 feet north and east of the SW cor. of the north half of Section 2, North Anderson Ranch Subdivision. McGregor & Panhandle Refining Co.'s No. 2 W. R. Farmer, 150 feet south and west of the NE cor. of the south 20 acres of the west 40 acres of Section 2, North Anderson Ranch Subdivision. Perkins, Cullum & Litchfield's No. 1 J. L. Anderson, 150 feet north and west of the SE cor. of the west 25.5 acres of the south 70 acres of the west half of Section 18, South Anderson Ranch Subdivision. Robert Oil Corp.'s No. 1 J. R. Garvey, 1,400 feet north and 1,965 feet west of the SE cor. of Section 1802, T. E. & L.

Brown County

Brooks & Dozier's No. 1 Hart & Roth, 2,101 feet north and 756 feet east of the SE cor. of Section 36, T. T. R. R., A-2,027, and located in Section 35, H. & T. C. R. R. Survey, A-1886. Cranfill & Reynolds' No. 4 M. L. Smith, 150 feet south and 738 feet east of the NW cor. of the M. L. Smith 87.25-acre tract out of Section 3, S. A. & M. G. Survey, A-850. Cranfill & Reynolds' No. 5 M. L. Smith, 150 feet south and 1,026 feet east of the NW cor. of the M. L. Smith 87.25-acre tract out of Section 3, S. A. & M. G. Survey, A-850. Cranfill & Reyno'ds' No. 6 M. L. Smith, 150 feet south and west of the NE cor. of Section 3, S. A. & M. G. Survey, A-850. Danciger & Cohen's No. 6 J. W. Haynes, 150 feet south and 1,350 feet west of the NE cor. of Section 9, J. Delgado Survey No. 785. Forest Oil Co.'s No. 2 P. Davis, 150 feet north and east of the SW cor. of the east 40 acres of J. A. Townsend Survey, A-2,007. Forest Oil Co.'s No. 9 M. L. Smith, 150 feet south and west of the NE cor. of their 100-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Gilman & McMurray's No. 1 J. W. Haynes, 150 feet south and 180 feet east of the NW cor. of the west 20 acres of Section 9, J. Delgado Survey No. 785. Kone Production Co.'s No. 5 Roy Hickman, 1,101 feet north and 160 feet west of the most northerly SE cor. of their 164-acre lease out of the Thomas Benson Survey No. 783, being 160 feet south and west of the NE cor. of their lease. Rex-Pyramid Oil Co.'s No. 1 M. L. Smith, 150 feet north and west of the SE cor. of the east 40 acres of the north 100 acres of the west 200 acres of the south 340 acres of Section 1, S. A. & M. G. Survey, A-849. Roxana Petroleum Corp.'s No. 7 M. L. Smith, 150 feet south and 161 feet west of the NE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same corporation's No. 8 M. L. Smith, 150 feet north and 161 feet west of the SE cor of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same corporation's No. 9 M. L. Smith, 150 feet south and east of NW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same corporation's No. 10 M. L. Smith, 503 feet north and 798 feet east of SW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Same corporation's No. 11 M. L. Smith, 503 feet north and 474 feet east of the SW cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Se'by Oil & Gas Co.'s No. 13 H. J. Ellis, 450 feet south and west of the NE cor. of their 130-acre lease out of Section 3, S. A. & M. G. Survey, A-850. Same company's No. 14 H. J. Ellis, 150 feet south and 900 feet east of the same cor. of same lease out of Section 3, S. A. & M. G. Survey, A-850. Sinclair Oil & Gas Co.'s No. 1 M. L. Smith, 150 feet north and 161 feet east of the SW cor. of the east 20 acres of the south 340 acres of Section 1, S. A. & M. G. Survey, A-849. Same company's No. 2 M. L. Smith, 1,353 feet north and 161 feet west of the SE cor. of Section 1, S. A. & M. G. Survey, A-849. E. L. Smith Oil Co.'s No. 6 M. L. Smith, 150 feet north and west of the SE cor. of the north 60 acres of the west 120 acres of the east 140 acres of the south 340 acres of Section 1, S. A. & M. G. Survey, A-849. Williamson and others' No. 1 R. L. Eddington, 150 feet south and 900 feet east of the NW cor. of the R. L. Eddington 512-acre tract out of the Robert Mitchell Survey No. 141.

Callahan County

Beams & Kingwood's No. 3 I. N. Jackson-B, 280 feet north and 980 feet east of the SW cor. of NE of SW of Section 14, E. T. R. R. Survey. L. G. Bradstreet's No. 2 S. T. Swafford, 150 feet south and west of the NE cor. of S. T. Swafford 50-acre tract out of the G. M. Vigal Survey No. 798. Paul English's No. 1 R. H. Mayfield, 330 feet north and west of the SE cor. of the G. W. Denton Survey No. 376. Roxana Petroleum Corp's No. 1 S. T. Swafford, 150 feet north and east of the SW cor. of the S. T. Swafford 50-acre tract out of the G. M. Vigal Survey No. 798.

Coleman County

R. E. Kennedy's No. 1 T. H. Ward, C of SE of the William Echols Survey No. 274. H. H. Gracey's No. 1 Henry Beck, 1,506 feet north and 4,989 feet west of the SE cor. of Section 99, T. T. R. R. Survey. Hodge & Baker's No. 1 Lee Vaughn, 1,000 feet south and 500 feet west of the most easterly NE cor. of the Martha Barker Survey No. 226. F. C. Scarborough No. 1 Will Hale, 1,800 feet south and 2,400 feet west of the NE cor. of Section 109, E. T. R. R. Survey, A-170.

Cooke County

Beckner and others' No. 1 William Hyman, 150 feet south and west of the NE cor. of O. R. Smith Survey, A-1,004. Camp-Heydrick and Oil Operators Trust Co.'s No. 9 M. J. Kleiss, 1,050 feet south and 150 feet east of the NW cor. of the

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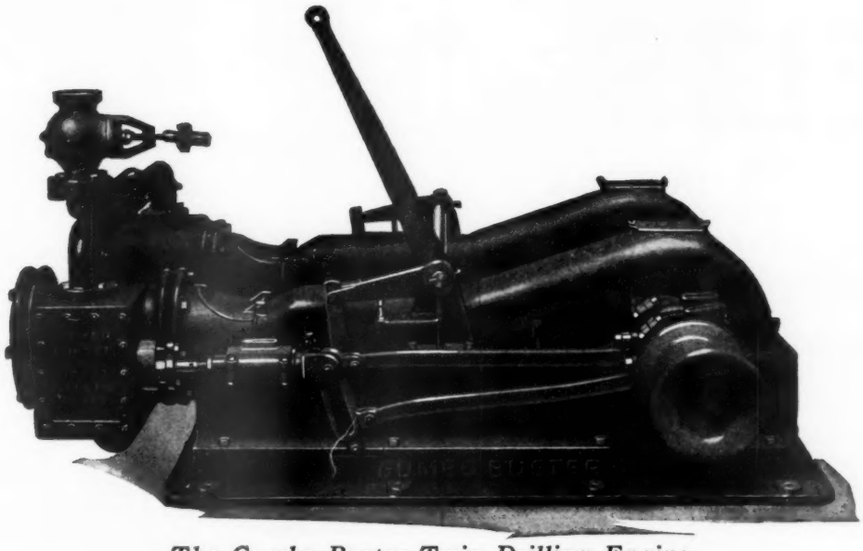

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M. J. Kleiss 117-acre tract out of the J. W. Littleton Survey, A-586. R. F. Duggan and others' No. 1 Fay Jones, 4,450 feet north and 200 feet west of the most southerly SE cor. of Section 11, B. B. B. & C. Survey, A-156, being 1,861 feet north, 72 degrees, 45 minutes east from the SE cor. of the C. Hart Survey. Magnolia Petroleum Co.'s No. 2 G. T. Andress and others, 600 feet north and 150 feet west of the SE cor. of the G. T. Andress 790-acre tract out of the Jonathan Clark Survey, A-194. Murchison Oil Co.'s No. 1 J. W. Harris Estate, 467.7 feet north and 302.6 feet east of the SE cor. of the J. Taylor Survey, A-1,044, and located in Section 7, S. P. R. R. Survey, A-1,000. A. J. Neff & Knox' No. 1 J. H. Esker, 25 feet north and east of the SW cor. of NE of Block 52, Town of Muenster. Oil Operators' Trust Co.'s No. 8 M. J. Kleiss, 150 feet north and west of the SE cor. of Block 62, Town of Muenster. Same company's No. 3 J. Koelzer, 150 feet north and 408 feet east of the SW cor. of their 18-acre lease out of Section 13, Thomas Scott Survey, A-900. Same company's No. 1 J. Stoffells, 150 feet south and east of the NW cor. of Block 63, Town of Muenster. Powell Oil Co.'s No. 1 H. L. Dennis, 150 feet south and west of the NE cor. of the west 40 acres of the south 53 acres of the north 133 acres of the A. Pope Survey, A-818. Stoneman and others' No. 1 W. A. Harris, 150 feet north and east of the SW cor. of NE of the J. Harris Survey, A-502. United Production Co.'s No. 1 Mrs. Fred Grotte, 150 feet south and 30 feet west of the NE cor. of the Mrs. F. Grotte 301-acre tract out of Section 5, E. T. R. R. Survey, A-363.

Crane County

Gulf Production Co.'s No. 42 J. T. McElroy, 200 feet south and 330 feet east of the NW cor. of their lease out of Section 185, Block F, C. C. S. D. R. G. N. G. R. R. Co. Survey. Tidal Oil Co.'s No. 7 University Land-1, 990 feet north and 2,310 feet west of the SE cor. of Section 47, Block 30, University Lands.

Eastland County

O. E. Latchshaw and others' No. 1 V. Harbin, 500 feet north and west of the SE cor. of the west half of NW of Section 4, Block 4, H. & T. C. Survey. Mook-Texas Oil Co.'s No. 5 Minnie Sibley, 200 feet south and 1,100 feet east of the NW cor. of the south half of Lot No. 8, W. Van Norman Survey. Same company's No. 6 Minnie Sibley, 200 feet south and 650 feet east of the NW cor. of the south half of Lot No. 8, W. Van Norman Survey. Panhandle Refining Co.'s No. 3 E. Webb-S. 450 feet north and 700 feet east of the SW cor. of Lot No. 3, W. Van Norman Survey. Same company's No. 4 E. Webb-S, 150 feet north and 400 feet east of the SW cor. of Lot No. 3, W. Van Norman Survey. States Oil Corp.'s No. 4 Minnie Sibley, 200 feet north and 1,100 feet east of the SW cor. of the north half of Lot No. 8, W. Van Norman Survey. Teatsorth and others' No. 3 Citizens' Waterworks, 200 feet north and 550 feet east of the SW cor. of Section 6, Block 6, E. T. R. R. Survey.

Howard County

Peer Oil Corp's No. 1 C. D. Read, C of NW of Section 39, Block 30, T-1-N, T. P. R. R. Survey.

Jack County

Bland & Strang's No. 2 James Ellis and others, 1,716 feet south and 1,416 feet east of the NW cor. of the J. Ellis and others' 485-acre tract out of Section 4, J. W. Williams Survey, A-877. F. E. Butler and others' No. 1 J. D. Gillespie, 800 feet north and 450 feet west of the NW cor. of Section 3, J. W. Williams Survey, A-877, and located in the heirs of W. Berryman Survey, A-40. Cunningham and others' No. 1 W. E. Bowen, 150 feet north and east of the SW cor. of the east 34.5 acres of the W. E. Bowen 134.5-acre tract out of the R. Parker Survey, A-461. L. M. Lamar's No. 2 J. R. Moore, 850 feet north and 250 feet east of the SW cor. of the J. R. Moore 250-acre tract out of the W. W. Brown Survey, A-2,004, and the heirs of W. Berryman Survey, A-40. A. C. Parks' No. 1 H. B. Bowen, 150 feet north and west of the most easterly SE cor. of the H. B. Bowen 650-acre tract out of the R. Parker Survey, A-461.

Pecos County

McMan Oil & Gas Co.'s and Marland Oil Co.'s No. 2 I. G. Yates, 275 feet south and 330 feet east of the SW cor. of Section 103 and located in Section 34½, Block 194, G. C. & S. F. Survey. Same company's No. 3 I. G. Yates, 275 feet south and 330 feet west of the SW cor. of Section 103 and located in Section 34½, Block 194, G. C. & S. F. Survey. Same company's No. 4 I. G. Yates, 275 feet north and 330 feet west of the NE cor. of Section 36 and located in Section 34½, Block 194, G. C. & S. F. R. R. Survey. Roxana Petroleum Corp's No. 1 J. H. Tippett, 275 feet north and 330 feet west of the SE cor. of Section 102, Block 194, G. C. & S. F. R. R. Survey. The California Co.'s No. 1 M. A. Smith, 325 feet south and 275 feet west of the NE cor. of Section 35, Block 194, G. C. & S. F. R. R. Survey. Simms Oil Co.'s No. 2 M. A. J. Delvin, 330 feet south and west of the NW cor. of Section 9, Block 105, G. C. & S. F., and located in Section 2, John C. Duval Survey, A-3,824.

Shackelford County

Wentz Oil Corp.'s No. 11 W. D. Reynolds, 179 feet north and 313 feet west of the SE of SW of Section 13, Block 11, T. P. R. R. Survey.

Young County

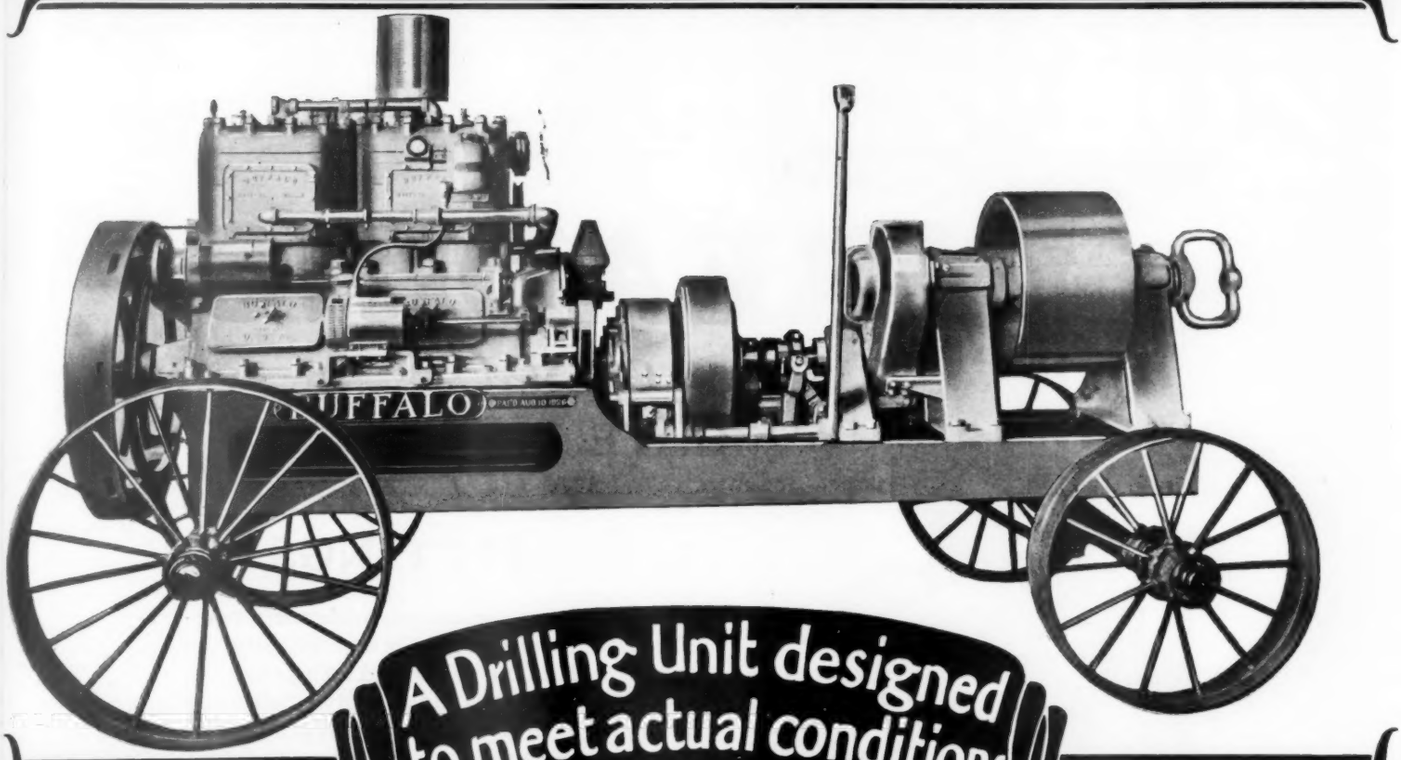
G. A. Clifford's No. 1 A. R. Rutherford, 150 feet north and 465 feet east of the SW cor. of Section 644, T. E. & L. Survey. Robert Oil Corp.'s No. 2 C. E. Graham-B, 150 feet north and 750 feet east of the SW cor. of the south 100 acres of the north 225 acres of the C. E. Graham 460-acre tract out of Section 3401, T. E. & L. Survey. Frank Rose's No. 1 D. R. Willard, 150 feet north and west of the SE cor. of SW of Section 227, T. E. & L. Survey. Rose and others' No. 1 E. C. Keith, 150 feet south and west of the NE cor. of the south half of the SE of Section 267, T. E. & L. Survey. Panhandle Refining Co.'s No. 1 T. J. Routon, 450 feet south and 1,825 feet east of the NW cor. of Section 265, T. E. & L. Survey. Conner and others' No. 10 E. N. McCluskey, 150 feet south and 225 feet east of the NW cor. of their 25-acre lease out of Section 3,415, T. E. & L. Survey. Godley Oil Co.'s No. 20 M. K. Graham, 150 feet south and 129 feet west of the NE cor. of their 40-acre lease out of the S. Tankersley Survey, A-278. Hines & Whatley's No. 1 T. R. Criswell, 700 feet north and east of the SW cor. of the T. P. Reeder Survey, A-1,354. Lucas and others' No. 1 C. W. Hinson, midway north and south and 150 feet east of the west line of the E. K. Longen Survey. Panhandle Refining Co.'s No. 21 E. N. McCluskey, 2,500 feet north and 2,163 feet west of the SE cor. of Section 3,415, T. E. & L. Survey, A-1234. Roxana Petroleum Corp.'s No. 13 H. M. Ford, 1,520 feet south and 300 feet east of the NW cor. of the W. T. Carter Survey, A-62. Seaboard Oil & Gas Co.'s No. 10 M. K. Graham, 200 feet north and 275 feet west of the SE cor. of their lease out of the S. Tankersley Survey, A-278. United Royalty Corp.'s No. 1 W. H. Thompson, 919 feet northeast of the southwest line and 1,978 feet northwest of the southeast line of Section 2,692, T. E. & L. Survey, A-1,131. Same company's No. 1 M. A. Wallace, 200 feet north and east of the SW cor. of the M. A. Wallace tract out of the J. Johnson Survey, A-160.

Wichita County

W. J. Grisham's No. 1 W. P. Ferguson, 150 feet north and west of the NW cor. of Block 37, P. Castleman Survey, A-35, and located in the William H. Spillers Survey, A-257.

Winkler County

Cranfill Brothers Oil Co.'s No. 1 M. J. Bashara, at the common corner of Sections 11, 10, 22 and 23, Block 77, School Land. Landreth Production Corp.'s No. 2 Grisham-Hunter, 330 feet north and west of the SE cor. of the west half of the NW of Section 45, Block 26, School Land. Same corporation's No. 1 Ida Hendrick-A, 330 feet north and 2,310 feet east of the SW cor. of Section 29, Block B-5, School Land. Republic Production Co.'s No. 1 Grisham-Hunter-B,



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It has drilled wells to a depth of 4,878 feet and handled a string of pipe weighing 45 tons. In cases where fishing jobs are encountered the Buffalo will readily pull two or three strings of tools. In muddy holes it will give any desired motion—no special device for motion building is needed to give tools the proper drilling motion.

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330 feet north and 990 feet west of the SE cor. of Section 41, Block B-5, School Lands. Roxana Petroleum Corp.'s No. 1 Ida Hendrick-B, 330 feet north and 2,310 feet west of the SE cor. of Section 29, Block B-5, School Lands. Southern Crude Oil Purchasing Co.'s No. 1 Ida Hendrick-C, Tract 88, 330 feet south and east of the NW cor. of Section 28, Block B-5, School Lands. Texon Oil & Land Co.'s No. 2 Grisham-Hunter-B, 330 feet south and west of the NE cor. of the west half of the SW of Section 45, Block 26, School Land.

Wise County

Cummings and others' No. 1 J. H. Rogers, at the center of the northwest 80 acres of Section 17, League 3, Hunt County School Lands.

Corrected Locations

In Archer County: Continental Oil Co. and Harry Hines' No. 1 L. F. Wilson, 150 feet south and 2,790 feet west of the NE cor. of Section 120, A. T. N. C. L. Survey. S. McGregor and Panhandle Refining Co.'s No. 1 W. R. Farmer, 150 feet south and east of the NW cor. of the south 20 acres of the west 40 acres of Section 2, North Anderson Ranch Subdivision.

In Brown County: Forest Oil Co.'s No. 8 M. L. Smith, 856 feet north and 150 feet west of the SE cor. of their 80-acre lease out of Section 1, S. A. & M. G. R. R. Survey, A-849. Phillips Petroleum Co.'s No. 1 C. Newsome, 150 feet south and 161 feet east of the NW cor. of the C. Newsome tract out of the G. R. Davis Survey, A-2,106. E. L. Smith Oil Co.'s No. 1 M. L. Smith, 150 feet north and east of the SW cor. of the north 60 acres of the west 120 acres of the east 140 acres of the M. L. Smith 340-acre tract outof Section 1, S. A. & M. G. R. R. Survey, A-849.

In Cooke County: Sun Oil Co.'s No. 4 J. Hacker, 150 feet south and 450 feet west of the NE cor. of their 77-acre lease out of Section 13, Thomas Scott Survey, A-900.

In Eastland County: States Oil Corp.'s No. 3 Minnie Sibley, 200 feet north and 650 feet east of the SW cor. of the north half of Lot No. 8, W. Van Norman Survey.

In Young County: Conner and others' No. 9 E. N. McCluskey, 150 feet south and 200 feet west of the NE cor. of the north 25 acres of the south 100 acres of Section 3,415, T. E. & L. Survey, A-1,234.

Petroleum Research Projects Announced By National Council

Six additional projects, Nos. 33-38 inclusive, have been recommended to the American Petroleum Institute by the Central Petroleum Committee of the National Research Council.

Geology—Project 33: The effect of natural gas upon the viscosity, surface tension, adhesion and general extractability of petroleum of various types—The problem would necessarily have to deal with different types of reservoir rocks, such as shales, cavernous limestones, conglomerates, sandstones and unconsolidated sands, in so far as these can be secured and duplicated in the laboratory.

It is the intention to work out the law of the rate of flow of oil in a well, depending upon the character of the reservoir rocks, the viscosity of the oil, the temperature of the oil and the pressure of the natural gas found with and in the oil. From these results the investigator will arrive at more accurate estimates of the amount of oil remaining in different types of reservoir rocks, after the methods now in use have reached the economic limit of production. There will also be presented the possibility of making valuable suggestions as to the best methods for further commercial recovery.

Physics—Project 34: The fundamentals of the retention of oil by sand 1—Measurements upon interfacial electrical charges between sand, water and oil. (a) By measurement of equilibrium distribution of particles of varying sizes, concentrations and materials (sand in water, sand in oil, oil in water, water in oil), attempt being made to compute charges from departure of equilibrium concentration from LaPlace-Perrin law. (b) By measurements upon the scattering of light by the foregoing suspensions and comparison of theoretical with observed scattering. (c) By direct measurement of mobility of these suspensions in electric fields—alternating and direct—with especial reference to conditions of change of sign of charge. (d) By measurement of effect of applied potential gradient on movement of oil through sand and influence of small additions of liquids and gases on such movement under a potential gradient.

Physics—Project 35: The fundamentals of the retention of oil by sand II—Measurements upon surface-tension at very large curvatures (pressed method-quartz capillaries) with especial reference to effect of minute admixtures of soluble ingredients.

Physics—Project 36: The fundamentals of the retention of oil by sand III—Direct measurement of adhesion of sand grains and other grains to oil-water surface and influence of minute ingredients in solution upon these adhesions—statistical studies with many particles and microscopic studies with single particles—effect of temperature.

Physics—Project 37: The fundamentals of the retention of oil by sand IV—Practical experiments on the flow and retention of oils in oil sands, involving: (a) Measurement of rates of flow of different crudes through actual cores obtained from different borings and relation of rates to porosity and other physical properties of the cores and crudes; also to temperature, pressure gradient and absorption properties of the sands for the oils; (b) Measurements on retention of oils by the cores as compared with retention of water as standard fluid; (c) Measurement on displacement of oils retained in sand by (1) aqueous solutions, (2) gases, especially hydrocarbons.

Physics—Project 38: Thermodynamic properties of petroleum hydrocarbons—Advancement in refining processes and in the design of equipment for the petroleum industry is greatly handicapped by a lack of reliable data on the thermodynamic properties of the fluids dealt with, and their variation with temperature and pressure. Some of the more important properties are: specific and latent heats, thermal expansion, thermal conductivity, compressibility, vapor pressure, vapor density, heat of combustion and heat of reaction on "cracking." There is an apparent similarity in the thermal behavior of most petroleum hydrocarbons and of their mixtures in petroleum products. Recent data indicate systematic variations of many of the properties with the density of the products.

It is proposed to determine several of the thermodynamic properties of various petroleum products and to correlate these determinations, in so far as possible, with similar determinations on pure hydrocarbons.

Gasoline and Lubs May Double in Price Within Ten Years

Gasoline and lubricating oils will double in price within 10 years' time, it was predicted at Los Angeles by W. J. A. M. van der Gracht, geologist and petroleum expert.

Present excessive oil production and waste, which he thinks tend toward the exhaustion of the nation's petroleum resources, and changing economic conditions were given by Mr. van der Gracht as the reasons. Although the cost of petroleum is bound to increase ultimately, curtailment of excess production and waste and the conservation of natural resources are the only means that can be used to delay or avert a price rise during the next decade.

Present fields, he says, are being rapidly depleted all over the United States, and in some instances by the use of wasteful methods, which prevent the production of more than 30 or 40 per cent of the actual oil in the ground. These methods will result in 60 or 70 per cent

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of the oil that might possibly be brought to the surface remaining in the oil sands forever, he declared.

There is so much talent being used in both the discovery and drilling of new fields where gushers can be found and oil produced cheaply that soon these possibilities will be exhausted, according to his statements.

"These two factors," he said, "will make it necessary in a few years to secure the nation's oil supply from wells where production is small and overhead costs high. Necessarily higher prices will follow.

"This also means that 10 years from now there will be no actual shortage of gasoline and lubricating oil, but the supply from the wells will not fill the demand and the oil companies will look toward shale mines, lignites and coal as the sources from which to obtain the remainder of the petroleum demanded by market conditions."

Fortunately, according to Mr. van der Gracht, tremendous production of both gasoline and lubricants from shale and other sources mentioned is possible in fields that have already been explored. At the present retail prices in most instances it is unprofitable to refine oils from these resources because of high mining and retorting costs, he declared. Higher prices will enable the owners of such properties to make use of their holdings at a profit, he added. Oil cannot generally be produced from shales now at less than approximately twice the present sales prices of petroleum, he stated.

Texas-Louisiana-Arkansas Stocks Show Net Decrease

HOUSTON, Tex., Sept. 3.—Crude in storage on August 1 in Texas, Louisiana and Arkansas total 99,704,243 bbls., a decrease of 2,450,981 bbls. compared with the storage in those states on July 1.

One of the largest declines is in the amount of light gravity crudes at coastal tank farms and shipping terminals on the coast, representing 1,119,089 bbls. less than on July 1.

This is crude piped from northern fields to be refined at plants along the Gulf or transported in tankers to refineries on the Atlantic Coast.

Stocks of crude in Arkansas decreased 1,386,010 bbls., due largely to the fact that normal conditions again prevail in the flooded regions and the pipe lines are handling more crude to the Baton Rouge refinery and for coastwise shipment.

Additional pipe line facilities account for the decrease in the surplus in the West Texas Field as compared with July 1, together with pinched in producers awaiting the completion of lines now being laid to Ingleside across the bay from Corpus Christi to Del Rio on the main line of the Southern Pacific Railroad and to Kemper. All the companies are erecting more steel storage in that field.

The following table shows the accumulations in each division of the three states:

STOCKS OF CRUDE
Texas, Louisiana and Arkansas, as of August 1, 1927

Gulf Coast

District—	Steel Bbls.	Earthen
Boling	29,435	.....
Batson	4,000	.....
Big Creek	59,350	.....
Barber Hill	2,500	.....
Dayton	500	.....
Damon Mound	16,325	.....
Goose Creek	175,770	164,275
Humble	744,490	1,659,200
Hull	465,590	1,000
Jenningş, (La.)	35,850	.....
Lockport, (La.)	317,740	.....
Markham	12,660	.....
Orange	271,125	28,000
Pierce Junction	23,195	.....
Spindletop	5,308,065	175,000
Saratoga	388,665	.....
Sour Lake	1,366,765	1,316,256
South Liberty	4,950	.....
Vinton, (La.)	326,585	.....
West Columbia	1,366,765	916,256
Total August 1	10,920,315	4,259,975
Total July 1	11,171,200	4,437,745
Decrease	250,885	177,770
Grand total August 1	15,180,290	
Grand total July 1	15,608,945	
Net decrease	428,655	

Stocks of light gravity crudes in storage at tank farms adjacent to refineries and at shipping terminals on the Gulf are as follows:

Baytown	1,778,900
Webster	1,482,000
Englewood	1,233,105
Norsworthy	393,650
Sinco	703,930
Texas City	246,000
Pasadena	207,850
Almeda	35,555
Crosby	72,220
Lynchburg	105,625
Total August 1	6,258,835
Total July 1	8,119,089
Decrease	1,860,254

Southwest Fields

Field—	Steel
Luling	525,825
Lockhart	6,099
Mirando	1,293,810
Total August 1	1,825,734
Total July 1	1,912,900
Decrease	87,166

North Central Texas

Eastland and Stephens Counties	9,270,245
Burkburnett	1,497,570
Electra	371,925
Petrolia	57,160
Archer County	244,560
Vernon	19,510
Nocona	120,400
Total August 1	11,581,370
Total July 1	10,439,650
Increase	1,141,720

East Central Texas

Powell	2,002,065
Mexia	9,426,950
Total August 1	11,429,015
Total July 1	11,261,530
Increase	167,485

Panhandle and West Texas

Panhandle	18,823,590
Reagan, Crane, Upton, Pecos, etc.	3,644,810
Total August 1	22,468,400
Total July 1	22,825,645
Decrease	357,245

North Louisiana-Arkansas

Bull Bayou, Critchton, Shreveport	4,158,309
Haynesville	4,365,665
Homer	3,176,035
Cotton Valley	307,445
Bellvue	321,575
Urania	101,965
DeSoto	1,002,190
Total August 1	13,433,184
Total July 1	13,175,040
Increase	258,144
Smackover, (Ark.)	14,451,610
El Dorado, (Ark.)	2,826,950
Nevada County, (Ark.)	257,855
Total August 1	17,536,415
Total, July 1	18,922,425
Decrease	1,386,010

Summary

Field—	Bbls.
Gulf Coast	15,180,290
Miscellaneous light oils at Gulf Coast	6,258,835
Southwest Fields	1,825,734
North Central Texas	11,582,370
East Central Texas	11,429,015
Panhandle-West Texas	22,468,400
North Louisiana	13,433,184
Arkansas	17,536,415
Total August 1	99,714,243
Total July 1	102,165,224
Net decrease	2,450,981

DOMESTIC EXPORTS OF PETROLEUM AND REFFINED PRODUCTS

Petroleum—		Month of July 1926	Month of July 1927	7 Mos. End. July 1926	7 Mos. End. July 1927
Crude	Bbls.	1,725,969	1,089,013	9,297,998	8,627,738
Crude	$	3,102,602	1,685,196	16,900,174	14,226,971
Total refined petroleum	Bbls.	8,098,670	8,870,506	61,656,154	66,340,177
Total refined petroleum	$	40,572,832	31,734,062	289,114,792	262,745,181
Gasoline, Naphtha and other light products	Bbls.	3,621,764	3,116,561	25,437,250	25,293,597
Gasoline, Naphtha and other light products	$	22,655,376	14,152,098	158,717,203	133,156,940
Oils—					
Illuminating	Bbls.	1,607,512	1,359,715	11,738,605	10,723,838
Illuminating	$	7,715,129	5,357,074	53,064,769	46,623,672
Gas and fuel	Bbls.	2,126,773	3,426,761	18,875,930	24,593,747
Gas and fuel	$	2,933,239	3,822,214	24,503,772	29,838,427
Lubricating	Bbls.	731,766	960,210	5,533,286	5,634,824
Lubricating	$	7,092,501	8,277,902	51,774,341	51,973,544
Other refined petroleum	Bbls.	10,855	7,259	71,083	94,171
Other refined petroleum	$	176,587	124,774	1,054,707	1,152,578
Paraffin wax	Lbs.	30,767,962	25,970,403	196,370,597	182,170,947
Paraffin wax	$	1,662,662	1,037,492	10,946,028	8,695,394

For hauling heavy loads over soft ground!

Athey Truss Wheel Wagons haul capacity 10-ton loads where ordinary equipment cannot operate.

They make their own roads as they go. Notice how the wheels carrying the load roll on broad steel tracks—not in the sand. Regardless of actual road conditions, Atheys carry their freight on never-ending steel highways.

Constructed with anti-friction bearings throughout, Atheys operate with from 30% to 50% less tractive power. Tractor operating and maintenance costs are cut or the number of teams per load is reduced. Operating delays are eliminated and you can haul every day regardless of weather conditions.

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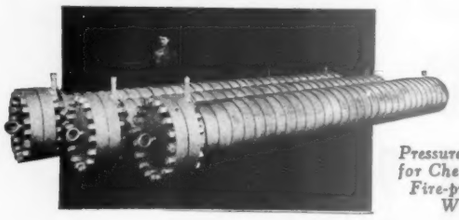

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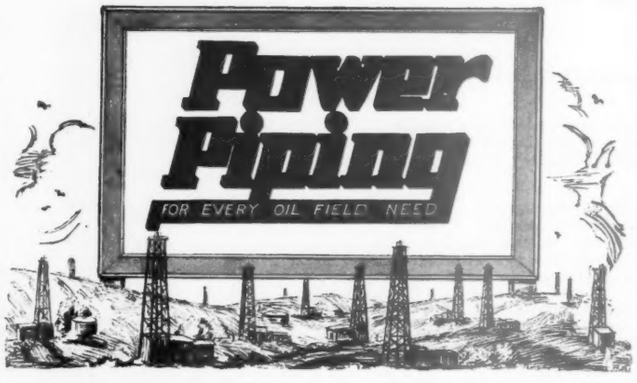

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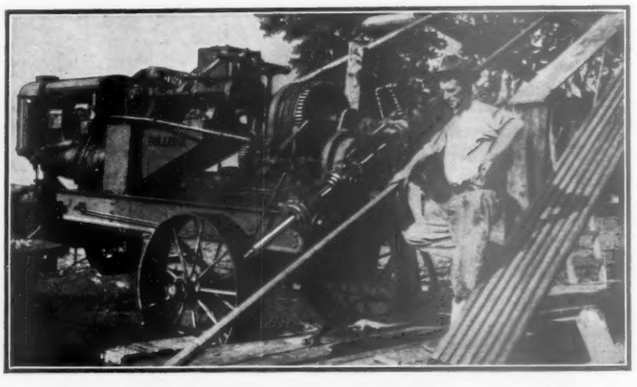

Angular Structure Drilling With Sullivan Diamond Drills

When you need to drill holes at an angle to secure accurate structure drilling results, the only practical method is a Sullivan Diamond Drill.

Suppose you want to intercept fractures through which oil may be seeping up from lower formation. Suppose the formation pitches, or dips, so that vertical drilling will break up the strata as it passes from one to the next?

With the Diamond Drill it is easy, since this machine is designed to drill and take core at any angle of the 360 degrees.

Can you do this with any other machine?

The photograph shows a Sullivan "CN" 1000 ft. mounted, Buda engine powered, hydraulic feed, Diamond Drill boring a hole at 30 degrees from the horizontal not far from Tampico, Mexico. In this work, boring in soft shale, the machine performed rapid and accurate work, recovering a high percentage of core.

Sullivan Mounted Diamond Drills are built in two sizes:—"CN," 1000 ft. capacity, and "N," 2000 ft., both removing 2-inch core. The Class "N" heavy duty machine has a special automatic chuck permitting the use of a grief stem for fish tailing and utilizing mud fluid when necessary.

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INCREASING WEST TEXAS PIPE LINE FACILITIES

FORT WORTH, Tex., Sept. 3.—Increasing production in the McElroy Pool of Crane County and the inadequate pipe line facilities out of there have prompted the Gulf Pipe Line Co. to build a 25-mile 8-inch loop from the Midland station to the pump station in the McElroy Pool. It is estimated the looping of the line will increase the line capacity from McElroy to 30,000 bbls. daily.

The Gulf Production Co.'s production in Crane County is around 22,000 bbls. daily and the third row of wells is being drilled on the McElroy lease south of the University Pool line.

Humble Pipe Line Co. is making rapid progress with its line from Kemper station in Reagan County south to Ingleside. The line will be built of 10 and 12-inch pipe. A lateral line will tap the Pecos Field and the main line will be extended on west into other West Texas pools.

The Illinois Pipe Line Co.'s line from the new Yates Pool in eastern Pecos County south to Del Rio will be 8-inch the entire length, instead of 8, 10 and 12-inch.

The 140 miles of line will be paralleled by the West Texas Utilities Co.'s electric power line and by installing pumping stations along the line will move as much through an 8-inch line as could have been moved through the larger pipe by gravity.

Four of the bottoms for the 25 80,000-bbl. tanks have been completed for the tank farm at Del Rio and the first rings of the steel are up. The farm comprices 468 acres a little east of Del Rio and the entire farm will cost in the neighborhood of $1,000,000 and will have a capacity of 2,000,000 bbls.

Twenty miles of the company's line has been laid up to Thursday of last week and the big engineering problem is the laying the line under Devil's River, which work will be done this week. Considerable of the route is through country that necessitates blasting out of the ditch for pipe. In addition to the 20 miles laid practically as much again has been strung along the route. Tot lalength is 140 miles.

Two lines already run from the Yates Pool north, one connecting with the Humble line out from McCamey and the other running to a tank farm at Hurdle in Crane County. However, the size of the wells in the Yates Field is such that pipe line capacity will be taxed for a long time to come.

AIRPLANES BEING USED IN WEST TEXAS FIELDS

HOUSTON, Tex., Sept. 3.—The widely expanding areas in which oil fields are being developed, the rapidity with which operations are being conducted and the keen drilling competition that now exists, all combine to cause executives of the large oil corporations to keep in close touch at all times with the various fields. These men are discarding the use of railroads and automobiles and the younger among them have adopted the airplane as a means of quick transportation.

Each year the oil fields are becoming more remote from cities in which the general offices of the corporations are located. Time was when the producing areas in the Mid-Continent, Texas and Louisiana fields were at the back door of such places as Independence, Tulsa, Houston, Fort Worth and Shreveport. It is different in the East. Oil City, Bradford, Pittsburgh, Sisterville, Lima and Findlay are still within easy reach of the declining production. The fields of which those cities are the center are now in the "evening of life," and but few thrills are experienced by operators.

The latest Texas fields are out "where the West begins," remote from towns and railroads, where the land had little or no value until oil was discovered. Out in these wide spaces the use of the airplane has become a necessity and its use is becoming more common every day by officials having charge of pipe lines and production departments.

The record airplane voyage to date was made by D. J. Moran, a vice president of The Texas Company, in charge of production. Mr. Moran's headquarters are in New York. He has just completed an airplane journey of more than 6,000 miles, flying from New York to Tulsa, thence to the Texas Panhandle and Upton-Crane-Pecos Fields, across into New Mexico and then to Houston. He and G. L. Noble, another vice president, made a side trip from Houston to Corpus Christi.

Officials of the Standard Oil Co. of Indiana have flown from Chicago to Shreveport and into the North and West Texas fields. That company has its own fleet of airships. Underwood Nazro, vice president and manager of the Gulf allied companies in Texas and Louisiana, has made several trips from his headquarters in Houston to the fields in north central Texas, the Panhandle and West Texas.

R. E. Hull, president of the Texas Pipe Line Co., uses an airship almost exclusively on trips along the lines and into the various fields. He has been flying for seven years, having made use of airships in Mexico, when located there for the company. The airplanes were also used to convey pay rolls to field workers and thus thwart the bandits that infest that country.

Recently a plane was made use of by C. W. McKinney, general manager of the Houston Pipe Line Co.; W. W. Blockner, assistant to E. W. Buckner, president of the Houston Oil Co., and A. B. Foster. The party flew from Houston to the Cole Field, in Webb County, more than 300 miles. The return to Houston was made in 2 hours and 10 minutes.

SEMINOLE GASOLINE OUTPUT IS LARGE

(Continued from Page 150)

operation it means a larger volume of gas for his plant.

With the exception of the Victor Gasoline Co. and the Forrest E. Gilmore Co., all the manufacturers in the Seminole Field also have crude oil production in that area. In several cases the manufacturers only have the gas from their own leases.

The Gilmore company is operating three compression plants with one under construction on leases owned by the Atlantic Oil Producing Co. In this case the manufacturer installed and is operating all the equipment used in the gas lift and plant operation. One of the plants is securing between 8,000 and 10,000 gallons of gasoline daily from one well. Other wells will be included as they are completed. The Victor company is operating small combination plants on leases of the Prairie Oil & Gas Co. leases.

Sinclair Largest Manufacturer

The natural gasoline department of the Sinclair Oil & Gas Co. is the largest manufacturer in the field. The present output of the company is approximately 120,000 gallons daily. This production will be increased materially this month by a fourth plant which started making gasoline during the past week. This plant ultimately will probably have the largest output in the field.

The construction of this plant in less than three months is typical of rapid construction which characterizes all programs in the Seminole Field. The plant has all the features of a permanent installation including homes and dormitories for the employes. It consists of 26 units. Eighteen of these units are operating as a compression plant and the remainder in connection with the oil absorption installation. The 18 units were first utilized for air lift in flowing wells. During the past week they were shifted to gas.

The Carter Oil Co. and the Empire Gasoline Co. are the other major manufacturers in the field, the output of each company being in excess of 100,000 gallons daily at the present time. Some of the smaller manufacturers are using portable equipment with satisfactory results. The Independent Oil & Gas Co. installed the first plant in the field about 10 months ago. The equipment of ths plant is largely portable. Its output up to the present time is in excess of 5,000,000 gallons.

A Faithful Watchdog on GUARD against CORROSION

Oil well metal equipment can be kept in good condition indefinitely by the adequate use of pure red-lead.

Pipe lines whether buried or above ground need the standard three-coat red-lead protection.

Tank cars are subject to every possible weather condition. Red-lead protection is a necessity.

The ideal painting combination for oil storage and run-down tanks is an undercoating of red-lead and finishing coats of white-lead.

In every division of the oil industry red-lead is protecting metal equipment from corrosion

CORROSION—enemy of iron and steel—is constantly attacking metal equipment thruout the oil industry. Oil men are alive to this fact. Sound business management demands that corrosion loss be reduced to a minimum. Oil companies want the surest, most economical protection for their metal equipment. That is why pure red-lead is the accepted protective paint for metal in the oil industry.

3 out of 5 use pure red-lead

The following investigation is convincing: A representative group of oil men were asked what paint they use for metal protection. Of the 53 who replied, 32 (or 3 out of every 5) said "pure red-lead." These oil men represent every oil field in the United States.

Dutch Boy red-lead is highly oxidized, finely ground, uniform. It provides the surest protection you can give your metal equipment. Use three coats. Pay especial attention to bolt heads, edges, and out-of-the-way corners. You will find your steel replacement costs materially reduced.

Dutch Boy red-lead is sold in both paste and liquid form. The liquid comes in the natural orange-red for next-to-metal coats, and also in greens, browns, and black for finishing coats. The paste is obtainable in orange-red, and can be shaded to dark colors.

To reduce evaporation loss

Tanks and tank cars painted in light colors guarantee a large yearly saving in oil. Dutch Boy white-lead is ideal for reducing evaporation losses in this manner. And used over an undercoating of Dutch Boy red-lead it not only cuts your evaporation losses to a minimum, but gives the same weather-protection.

We shall be pleased to help you solve any question of metal protection. Specialists in our Department of Technical Service have made a study of paint for the oil industry. Their knowledge is thoro. Their assistance is free of charge. Address our nearest branch.

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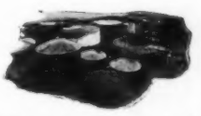
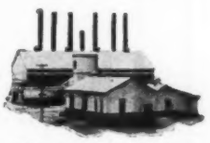


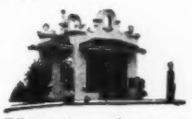
All metal equipment should be inspected frequently. Gases and rust-forming elements work together to produce corrosion.



Oil company industrial plants find repair bills are reduced when red-lead is used on all metal equipment.

Tankers are constantly menaced by the rust-forming elements. Care should be taken to keep the red-lead shield intact.

Tank trucks should be inspected frequently for repainting. Bumps and scraping remove the toughest paint.



Filling station metal equipment should be painted for two reasons—looks and protection. Lead paint is ideal for both.

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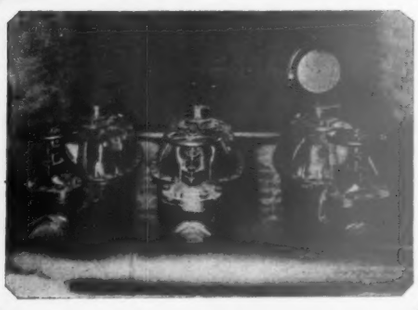

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Experience Confirms It

Whenever a thorough analysis of the comparative merits of gas meters is made—good judgment always indicates EMCO as the logical choice — for EMCO meters have a cast iron durability, a positive accuracy and an easy accessibility that appeals to every progressive Gas Company alike.

The EMCO cast iron construction originated by this Company marked the greatest advance in the history of the meter industry by replacing the frail and unsatisfactory tin meter. Since this time, EMCO has steadfastly maintained this leadership by constant improvement.

As a result, EMCO meters of today have many exclusive features in design, one of which is the easy accessibility which makes it possible to repair or adjust an EMCO meter in a few minutes without removing it from the line —a point of great importance to foresighted gas companies who believe in the economy of permanence.

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IMPRESSIONS OF ALBERTA FIELD GAINED BY PETROLEUM ENGINEER

By Victor Lauriston

CHATHAM, Ontario, Sept. 3.—In an address to the Central Alberta Oil & Gas Association at Edmonton a short time ago, T. G. Madgwick, federal petroleum engineer of Calgary, dealt at length with the oil situation in the Canadian West. Mr. Madgwick was professor of petroleum technology at Birmingham University before he recently joined the federal petroleum staff. In part he said:

"I think I have come to Alberta as nearly unbiased as I can hope to be and so will give you my first impression. We will talk more in detail perhaps a few years hence.

"There are three kinds of impressions one gets on entering a new field, and these are geological, engineering and economical. I will say a little about each.

"One of the easiest mistakes to make is to read into new fields more or less fancied resemblances to others with which one is familiar. Thus I have no doubt some of you have met men who can see resemblances in Turner Valley to, shall we say, Oklahoma or California, or wherever they happen to come from. It is on the same principle that one mountain looks very much like any other mountain and about as shallow. As a matter of fact, nature never really duplicates. And each field has its peculiarities, less marked perhaps in the case of gentle structures such as those you have at Wainwright, but very much so in the case of complex structures such as those in the foothills. And yet it is only by setting up some kind of a working hypothesis—based of course upon analogies drawn from other fields—that one can hope to eventually arrive at anything at all resembling reality in our interpretation of what we find in any new field.

"There is in some respects a decided resemblance technically between the foothill region and the Carpathian type of field in Europe. In the Carpathians you have the mountains pushed outward along a curving front over the more recent formations which are held back by the older rocks in the north and east.

"Here in the foothills we have the same overthrust towards the east which is on a very grand scale, together with a certain amount of convexity of mountain front. The strongest manifestations of oil and gas have, up to the present, been found along the front where the older formations are lying on the western flank of a distorted field; viz: Turner Valley.

Plan for Development

"We must be on our guard, however, against pressing this simile too far. The differences between the Rockies and the Carpathians are too great for any useful deductions to be made on the oil prospects. It is rather in emphasizing the need for continuous geological investigation during the development of the fields that one can learn anything useful by a comparison. If you take some of the typical Carpathian structures as they have been worked out by careful correlation of well logs, you will find that in the earlier stages it was well nigh impossible to foresee the trend of development and in some cases it was almost as if each new well necessitated a new or revised map. The same is likely to apply to most of the foothill structures here in Alberta. You will need the surface geological features mapped with utmost detail on sufficiently large scales and then keep close track of the underground formation as revealed in the drilling operations. In fact, it looks to me that a real live policy would involve the location of wells, in the early stages of development, more with the object of gaining geological information than as definitely aimed at production.

"In other words, the man who has the courage of his convictions and is not afraid to wildcat and use all geological aids and, of course, has the necessary financial resources, is more likely to be successful than anyone who slavishly follows the ordinary textbook ideas of oil field geology.

"Take Turner Valley as an example. That section of it between the two branches of the Sheep River shows on surface something approximate to anticlinal structure, but that doesn't justify anybody in attempting to locate a well on the presumed crest and then sit down and leave it to the driller. On the contrary, as you are all aware, drilling is liable to result in surprises not at all foreseen from the surface geology. It is easy to understand why that should be so, when we remember that the limestone down below is more rigid than the shales and subordinate sands intervening between it and the Belly River sands which really act as indicators of the fold on surface.

"There is more give in the shales and the complicated block faulting which probably exists in the limestone in association with the overthrust becomes toned down in its passage upward through the shales, so that we can only infer approximately what it is really like, and then only as drilling progresses in depth shall we work gradually toward the truth.

"I do not even suggest that there is necessarily a gradual change from the more complex to the less as we approach the surface; the reverse might be the case, as appears to be the opinion of Anglo-Persian geologists regarding their main field at Maidan-i-Naftun. There you have also a deep-seated limestone overlain by shales, etc., and in front of a curved mountain range — the Zagros arc. You have fairly high grade oil in the limestone under high pressure, but the depths are less than those in Turner Valley. You have, however, wonderful conditions for big producers holding up for many years. In that regard we may draw comparison with our prospects here, but that is not the main point I am getting at for the moment. The thrust from the mountains appears to have largely spent itself in puckering those formations nearer the surface, while the limestone below appears to be more gently and broadly folded. It is, of course, more rigid.

Peculiarities of Structure

"It may be argued that Turner Valley is only one of many similar structures in the foothills. Quite so, but they are all liable to have their peculiarities, and I am convinced that apart from sheer luck, only by rigid scientific methods of development can they be brought into the producing stage without very heavy cost.

"The lessons learned from Turner Valley will guide in the development of other structures. We know that many of these structures mean deep drilling but I look to Canadians taking the lead in the drilling technique of the future, as they have done in so many countries in the past. There is no question of the oil being here. Have you gentlemen the courage of your convictions, to see that such developments are not stifled for want of the necessary funds, the brains or the men? Or are you content to wait for outside capital?

"How can you best work out the geological problems arising in the more disturbed areas? I am not thinking of literature for peddling stock but of geology as the basis of all field work. Well, the first thing is to get good geologists. And the best way to get them is to take fully qualified young men and give them real work to do. You have all the machinery for training them right here in Edmonton. Are you getting the most out of it? There should never be an important well drilling without some young fellow around continuously and working on the logs. You need fully qualified men.

"In the flatter structures of the plains, core drilling is proving an important factor in determining structures, and can be done relatively cheaply, owing to the shallow depths called for in that class of work. In the complex, deep structures of the foothills it may often prove most useful, too, although for reasons already given, shallow drilling will not suffice as a rule. It is possible that other methods, which have been tried out during

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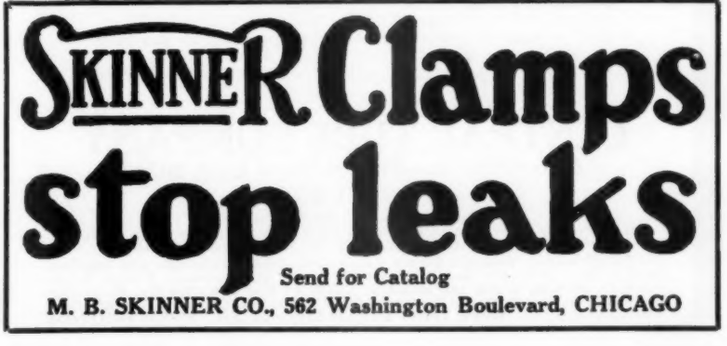

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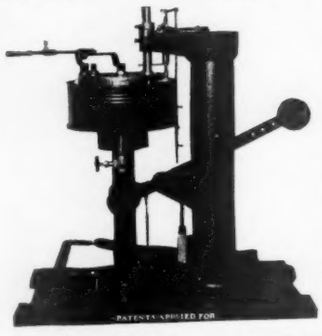

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the past 75 years with some successes, may prove very serviceable in elucidating the structures in the foothills and perhaps in the plains, without the need of preliminary test drilling.

Geophysical Methods

"I refer to those methods usually called geophysical. Of these the prototype is the torsion balance, originally used for this class of work on salt masses in central Europe and now since the war used to a great extent in the United States by all important oil groups. Other methods are based on magnetic observation or seismographic records of waves set up by explosives. They are delicate methods, requiring highly-trained observers and generally still more brainy people to interpret their results and also involve most expensive equipment, but where they can be used successfully soon pay for their cost by the elimination of wildcats in localities shown by their use to be superflous. None of these methods may be of any use here, but I should very much like to see a series of cross-sections of any typical foothill structure prepared by their use.

"Every up-to-date oil operator should have his drillings collected and examined by all the refinements, which are part of the return made by the oil industry to geological science for the help she has given it. It is pitiable the loss of information that one continually finds owing to improperly kept logs, indifferent sampling and so on.

"When large sums have been spent and a negative result obtained the operator is often no wiser for his heavy expenditures than he was before. Should a well be deepened or another started? Questions which naturally arise, but the operator too often has thrown his costly information away. No wonder the oft-repeated saying that the big group lives on the bones of the small operator.

"It might be rash to start out in these directions on too grandiose a scale if there were no proven oil in Alberta, but that is not the case. I should be the first to advise caution, but we are past that stage. I remember when the Dingman well was producing in 1914, people telling me it was a freak and meant nothing. The same when Royalite No. 4 came in. I was told by some it was only a freak. I never had a chance to see either event. I did not see the actual explosion of the Vulcan well, but I have studied its results and I am glad I wasn't too close. I have some respect for the forces that were behind it, and if they are freaks, well, they are pretty valuable ones. In that explosion the top of the separator, made of 1-inch plate, was blown 230 yards. Of course, that wasn't straight gas pressure, but the sudden rush of a semi-solid mass of ice, gasoline, sulphur and fine dust, with a kind of water-hammer effect, but what must have been down below to start it?

Engineering Problems

"This brings me to the importance of the engineering problems that arise in developing such a field. You have not only the great depths that seem likely to be general in the foothills and which call for plant embodying the best materials, the best design and adaptation to the conditions actually met with here, and also the very best drillers and engineers obtainable, but you have these high gas pressures to consider. As far as the drilling itself is concerned you have not only got to rely on plant and methods that have been found successful elsewhere, but you have to go one better.

"Alberta has got to take the lead and is already proceeding to do so, but there is a lot to be done yet. Unless you train up your own drillers, your own engineers, and tackle the field problems from first principles, you are not going to make a success.

"The losses that follow neglect or inattention to the engineering side can easily ruin any oil field enterprise. The false economy that loses a deep hole from refusal to retain the best technical advice is suicidal. Every ill-advised location, every dud hole is a loss to the industry and to the nation. The geological information obtained from a lost capital well could have been obtained at a tithe of the cost by other methods. As to the drillers themselves, it is good men with long experience of the local conditions that are most likely to keep their holes straight and give the best and cheapest holes. Already there are signs that equipment considered the best elsewhere requires to be strengthened. It is not enough to wait for the supply houses to come along and say they have something better. Operators must specify what is needed and that they are not always in a position to do if they rely entirely on their driller for all the technical advice. He has plenty of other work to do.

"There is the difficulty of drilling into the pay when the limestone is reached. The present efforts to do this with the diamond drill are very interesting and seem to be meeting with success. It is not a matter of the type of tool used, however, for the real problem is the high pressure, its control and the prevention of freezing up of the hole due to the expansion of the gas met with. It is hoped to evolve a method with the diamond drill in which sufficient back pressure can be held on the well to prevent the blowing out of the fresh water. Every time this happens the side of the hole becomes coated with ice, and this tends to accumulate, probably some distance up the hole, particularly when such blowouts occur at frequent intervals. This ice may finally hold the drill rods and will remain after the hole is put to production. Then, when a back pressure has been kept on a well for some time, there may be a collapse of large quantities of this frozen material into the bottom of the hole, possibly choking it sufficiently to allow a pressure to build up and shoot the whole mass out—with disastrous results to the surface control arrangements if they do not allow this slug a free passage.

Well Control

"Well control therefore becomes an important factor in such a field and again we have unique conditions. We have to evolve methods suited to them and not tamely to sit down and take what is sent us. I don't believe anything would stand up to one of those rushes of ice. It is not 1,000 lbs. but the water-hammer effect, which may mean a momentary pressure of several thousand pounds—whatever the bursting pressure can rise to, in fact. It has just got to have an easy passage into space, and then with luck there should be less danger of such a mass accumulating again. The design of such control arrangements is being perfected. There is a very real difficulty in getting very high pressure fittings but they can be made and they must be demanded. Unless a well is finished and controlled in such shape that it can really be shut in, no proper conservation methods can be adopted.

"Conservation is, of course, the keynote of the operating clauses of the petroleum and natural gas regulations, and they should be welcome to all good operators. I have worked under different sets of regulations in various countries, but have never known any to compare with ours in their endeavor to protect and encourage true development of the oil and gas resources and yet aim at the elimination of waste—the true aspect of conservation. I wish we could see these regulations applied to all lands, not only to those operated under the department. It is only thus that the objects aimed at can be fully achieved.

"It is only of comparatively recent years that it has been possible to talk of conservation to oil men because it was a slow process educating them to appreciate the true significance of waste in regard to their own future prospects and to bring about the view that in dealing in liquid and gaseous minerals one has factors to consider about their ownership which do not arise in the case of solid minerals.

"All important oil resources nowadays are the subject of international concern. All eyes are on Alberta now. Do you propose setting the world a good example in conservation, profiting by the mistakes of others? If so, co-operate in every way with the department.

"We are always being told there is an imminent shortage of oil, and doubtless we are much nearer to it than we were 20 years ago. There is, of course, no

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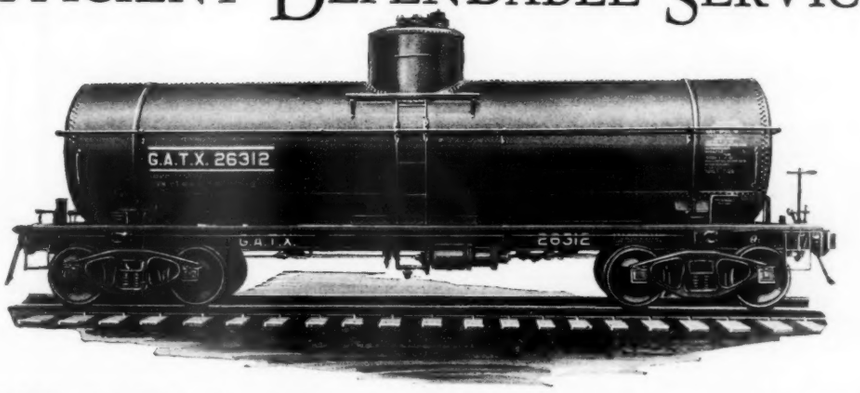

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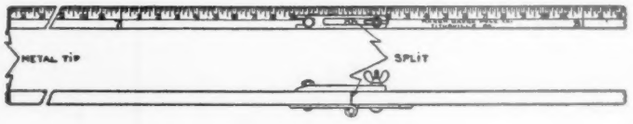

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likelihood of the exhaustion of the world's supply of petroleum in the near future. What it really amounts to is that sooner or later the consumption in the United States will overtake the production and that all improvements in cracking will fail to make up the deficiency in motor fuel. Then Alberta will come into its own. It is fortunate that its resources remain still very largely intact. The chances of discovery of fresh big fields in the world is now small. The fields that offer, in my opinion, the greatest hopes for the future are in Canada."

Colorado River Bed Titles Case May Be Taken to High Court

By Tolbert R. Ingram

DENVER, Colo., Sept. 3.—Litigation inaugurated in the Seventh District Judicial Court, at Monticello, Utah, on May 29, 1926, by the State of Utah and the Texas Production Co. to clear title to the bed of the Colorado River in the southeastern part of the state probably will be carried to the United States Supreme Court regardless of the outcome of drilling operations in that area. The issues have been joined between the S ate and the Federal Government in such a manner that a final determination in the highest court will be sought.

Shortly after the first discovery of oil on the Cane Creek Dome, in the winter of 1925, the Texas Production Co. acquired from the Coloriver Oil Co. the latter's lease from the State of Utah on the mineral rights to a portion of the river's bed. The river cuts through the Cane Creek, Shafer, Lockhart and other of the so-called Colorado River structures and if these domes had come in as producers, the riverbed would have become immensely valuable inasmuch as some of the tracts offset wells that were then drilling. The State of Utah approved the transfer of the lease to the Texas Production Co.

The same ground included in the State lease was also covered by prospecting permits issued by the Department of the Interior, these permits embracing land on both sides of the river and that in the bed. The conflicting claims made necessary an adjudication to determine whether the title to the bed of the river rested in the State or Federal Governments. The Texas Production Co. and the State of Utah brought suit in the State court to quiet title. The Midwest Oil Co., Midwest Exploration Co., the Colorado River Oil Syndicate, Utah Oil Refining Co., Mountain Producers' Corp., the Salt Creek Producers' Association, and a number of other companies and individuals were named as defendants.

The case was subsequently transferred to the Federal District Court at Salt Lake City. Last January Judge Tillmon D. Johnson heard a motion to dismiss filed by the defendants. In pleading for a dismissal it was contended that the United States was an indispensable party to the suit and had not been made a party to the litigation; that the title to the bed did not pass to the State, and that even if it did in the first place, it had reverted under the riparian ownership doctrine of the common law which, it was claimed, had been adopted by the State of Utah. The court held that the United States was not an indispensable party and that on the pleadings there was nothing to indicate that the Government ever claimed that the bed of the river did not pass to the State. The court named a time limit for the filing of briefs.

Last week efforts were made to set the case for hearing, but the calendar was too full to name a date. The oil companies and permittees do not appear anxious to press for a hearing because in the meantime the value of the land in question has not been definitely determined by the drill, and further testing may be inagurated at an early date. However, the suit has assumed an increased importance. The Secretary of the Interior has requested the Attorney General to have the United States enter the case as an intervenor and Senator Reed Smoot

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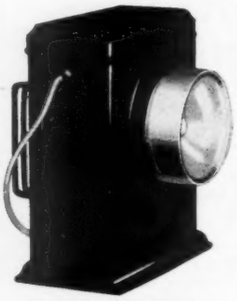

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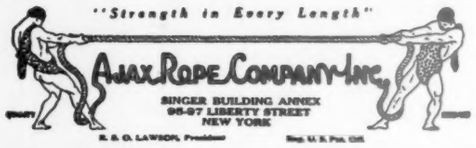

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has been interested in bringing this about so the case may be tried regardless of the wishes of the oil companies. It is understood the department is considering whether to enter the case as an intervenor or to bring a new suit against the State directly in the Supreme Court. The court was requested to set the date for the hearing some time in next January, but the court declined to set it so far in advance, so it will come up next rule day.

The Midwest's discovery well on the Cane Creek Dome was located on the edge of the river. The Texas Production Co. commenced constructing cribbage in the river to drill an offset, but this was discontinued when the litigation was inaugurated. The Midwest's well encountered numerous showings of oil and gas, but finally was abandoned.

BOLIVIAN OIL DISPUTE

A few leagues of the almost unknown Chaco region soil, popularly believed to contain valuable oil deposits, may, it is said, lead to hostilities between Paraguay and Bolivia unless efforts now being made by two special commissions appointed by the respective countries to meet in Buenos Aires to settle the dispute on amicable lines, are successful.

PERPLEXING PECOS PROBLEMS

By Arthur Rich
Ponca City, Okla., or Artesia, N. Mex.

In the realm of all creation
Nature's laws are fixed, we see
So that crystal, plant and creature
Must obey, if they shall be.

When the earth, by crumpled folding
Or the fault with slickensides
Builds up heat in fold and fissure
Pent up steam, where water hides,

And this heat from crumpled folding
Is expelled in blasts of steam
Belching forth Lapilli, boulders,
Or the molten lava stream.

Then the laws of crystal forming
Strict to Nature's rules comply
So that emerald, topaz, quartzes
On time of cooling most rely.

If the heat is deeply seated
And with acid fumes is charged
Sulphates, lead and zinc and copper
In the seams will be enlarged.

In the last throes of its struggle
When the fumerole must die,
In a mudpot baked to hardness
As a fossil it must lie.

Algae, first of plant creation,
Round this fumerole will spring,
When beside, for miles around it,
There is not a living thing.

Did the like beget the living
In this algae as it grew?
Or did chemicals uniting
Follow law and bring it through?

Is the life of all creation
From this algae as we're told
Caused to spread, divide, develop
And in species to unfold?

So that hundreds, myriad millions
Of the living things that be
Plants and insects, fowls and mammals
Or the fishes of the sea.

Are the outcome of unfolding
In the progress of its kind
Till these species, myriad millions,
Baffle thought in human mind?

When the catalog we're planning
And division we would make
So that all the busy people
From its page the name may take.

And be certain that they're finding
To what kingdom it belongs
We're dumbfounded to discover
That our labors are prolonged.

When a little rock we're handed
Of which plenty can be found,
And we're asked, "Now just what is it?"
We must often glance around.

Search our handbook, ask our neighbor,
Look through this and that to find
Just the class that it belongs in
And to fix it with its kind.

We have diamonds on the Pecos
(I'm using now the local name),
That the laws of crystal forming
Have obeyed, and now great fame.

Is heaped on those who first discovered
Why they formed along the wall
Of outercropping gypsum ledges,
In glistening clusters large and small.

"Major faults and hot solution
Is the cause," so they have said,
"That we find them in such plenty
Lying in the gypsum beds."

But the law by which they gather
Forming faces hexagon,
Is discussed by wise and simple
But is not plain, in lexicon.

It is true they are not diamonds
Only "Pecos quartz," so called,

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TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

But they're formed in gypsum, bedded,
Even gypsum round them walled.

Was it silicon in cooling
From solution as we're told
Formed these crystals in the Gyp beds,
Just as pure as smelted gold?

And did faulting then engender
All this heat both far and wide
So that diamonds can be gathered
All round the hills and river side?

Or was a cooler, calmer, process
By a law we know not yet,
Caused to form these glistening crystals
And in the ledge of Gypsum set.

In the kingdom inorganic
Crystals simple and compound
From both hot and cold solutions
Have been formed and can be found.

There are two great Permian basins
Where thick Salt beds are laid down
With a base of pure Potassium
Or of Sodium it is found.

From the plains Trans Pecos Texas
To Nebraska's Southern bluff
In thick beds of Sodium Chloride
Has been laid this "Seasoning Stuff."

Out in Alsace and at Strathford
Is the second big supply
Both of Potash and of Sodium.
So man will never go awry.

Just for seasoning there is plenty,
For supply we are not scared.
"When it rains, it pours," they tell us
If by Morton it's prepared.

But Geologists are wondering
Both the Doctor and Rockhound
Why their correlations differ
In the Strata it's laid down.

Some are certain one deposit
Takes in all this seasoning stuff
From the town of Pecos, Texas,
To Nebraska's Southern bluff.

Others positive two deep basins
In the Permian are laid,
And thick beds of Gyp and Limestone
Separate the time when made.

Above the San Andres, they tell us,
In the Castile, was laid down
Salt, a thousand feet in column,
As in the Maljamar they found.

While the Rose, down close to Texas
Found its Salt much deeper down
In the Geologic column,
So some tell us they have found.

Just above the Delaware Mountain
In this well, they say, it's found,
Which would make two separate basins,
One high up, and one low down.

Others feel that too much column
Accounted for, by "Pincing out"
Must be lost in correlation,
To use this double basin route.

Why is Abo in the mountains
Formed of Arkose, not of clay,
While in foothill, plain and valley
It is softer, so they say.

Did the Ohio find the Abo
When it drilled the Tracy dome?
Was it Arkose, as at Manning,
Or quartz sand, but still at home?

There is Yeso at the outcrop,
Mr. Stewart tells us so,
On the Alamagordo hillside
Matters not which way you go.

But in Texas, Davis tells us,
Not a grain was there laid down,
But a new, more rich deposit,
Delaware Mountain, there is found.

In the plains, Trans-Pecos-Texas
From the Delaware, we're told,
Wells in barrels, hundreds, thousands,
Will yield up their liquid gold.

But when sediments were forming
And New Mexico laid down,
They forgot to leave the KEY BED
So it might be easy found.

Now we're wondering, is it present?
And how deep beneath the ground
Must the bit be sent in drilling
And the Delaware be found?

"Is the Capitan a limestone
Or a Dolomite?" they sigh.
Can you find it at Artesia,
And if so, where does it lie?

All agree the Delaware Mountain
Below the Capitan is found,
Some, that oil from it is gushing
From Texas wells of great renown.

Is famed Capitan of Texas
Just the San Andres, so called
Be a few who chanced to wander
To that perpendicular wall.

At the Point of Guadaloupe Mountain
Where the ledge of dolomite
Stands up straight with squared off shoulders
And may contain some Oolite?

In the well State-Levers-Texas
Number Two, it has been found,
Plates and spines of Echinoiderms
Have been freely strewn around.

Protozoa, Bryozoa,
Mixed with these they also see.
All were once the living creatures
In the bottom of the sea.

At the Point they also find them
In the Girty book we read.
If the two we find are common,
All depends, Who has the "lead."

Now to settle these grave problems
Graphic log and steel must tell
From the correlated samples
Of the deeply boring well.

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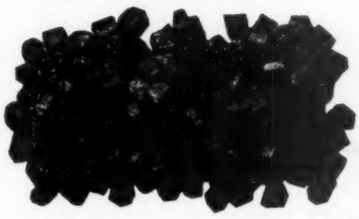

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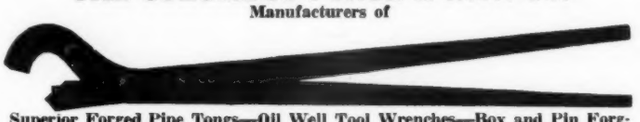

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for June

Company—	Month	Daily Av.
*Prairie P. L. Co.	4,440,000	148,000
Gulf P. L. Co.	1,330,590	44,353
Texas P. L. Co.	853,625	28,454
Magnolia Pet. Co.	1,716,829	57,228
Empire P. L. Co.	1,826,981	60,899
Cosden P. L. Co.	971,624	32,387
Sinclair P. L. Co.	2,415,090	80,503
*Other lines	12,720,000	424,000
Total June	26,264,739	875,824
Total May	26,935,013	868,870
Difference	670,274	6,954

Shipments

*Prairie P. L. Co.	5,505,552	183,518
Gulf P. L. Co.	1,122,928	37,431
Texas P. L. Co.	725,638	24,188
Magnolia Pet. Co.	1,206,159	40,205
Empire P. L. Co.	1,253,736	41,791
Cosden P. L. Co.	826,072	27,536
‡Sinclair P. L. Co.	2,633,047	87,768
*Other lines	12,000,000	400,000
Total June	25,273,132	842,437
Total May	25,887,274	835,073
Difference	614,142	7,364

Stocks

*Prairie O. & G. Co.	30,300,000
*Prairie P. L. Co.	2,000,000
Gypsy Oil Co. & Gulf P. L. Co.	8,761,873
The Texas Company	4,723,332
Magnolia Pet. Co.	5,611,652
Empire P. L. Co.	3,277,315
Cosden P. L. Co.	2,915,742
*Sinclair Crude Oil Pur. Co.	19,600,000
Carter Oil Co.	15,528,629
*Other lines	10,650,000
Total June	103,378,545
Total May	101,197,943
Difference	2,180,602

*Estimated. ‡Prairie Pipe Line shipments include Texas crude and Sinclair Pipe Line shipments include Wyoming, Texas crude. Note—Stocks do not include approximately 4,000,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 1,700,000 bbls. of Texas Panhandle crude in storage in Oklahoma and Kansas.

EASTERN PIPE LINES
Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for June and July:

	June, '27	July, '27
Nat. Transit	157,315.01	155,782.70
S. W. Pa. P. L.	93,809.85	85,622.93
Eureka P. L.	390,791.12	378,082.34
Buckeye P. L. (Macksburg)	344,562.31	319,986.23
Buckeye P. L. (Cleve)	11,529.52	11,219.55
Buckeye P. L. (Lima, etc.)	139,035.28	126,613.83
Indiana P. L.	11,406.99	9,105.05
Cum'land P. L.	250,266.24	261,877.90
N. Y. Transit	24,809.81	22,074.99
Tidewater P. L.	189,396.14	185,203.73
Pure Oil	167,510.92	157,734.23
Emery P. L.	55,995.64	54,627.01
Paragon Dev.	26,293.32	28,094.42
Pgh. P. L.	5,710.36	5,520.99
Stoll Oil Ref.	13,632.37	14,258.01
Total	1,882,695.38	1,815,803.91
Daily average	62,756.51	58,574.32

Note—Indiana Refining Co. also reported other receipts of 416,243.11 bbls. Paragon Refining Co. had other receipts of 171,247.26 bbls. Paragon Development had other receipts of 1,492.08 bbls. Pure Oil had other receipts of 21,717.04 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for June and July:

	June, '27	July, '27
Nat. Transit	307,649.33	330,044.32
S. W. Pa. P. L.	317,891.14	363,850.84
Eureka P. L.	181,937.70	183,351.51
Buckeye P. L. (Macksburg)	165,198.17	175,567.01
Buckeye P. L. (Cleve)	971.56	971.94
Buckeye P. L. (Lima, etc.)	930,510.48	954,040.89
Indiana P. L.	975,616.39	1,038,598.35
Cum'land P. L.	150,959.91	139,659.15
N. Y. Transit	318,171.90	364,628.63
Northern P. L.	187,632.30	200,019.17
Tidewater P. L.	139,216.41	106,016.04
Pure Oil	163,634.33	165,167.59
Emery P. L.	54,410.09	57,048.51
Paragon Ref.	171,015.11	176,876.31
Indian Ref.	394,690.00	400,446.10
Paragon Dev.	29,986.63	29,982.32
Pgh. P. L.	6,384.84	5,593.34
Total	4,493,146.29	4,691,862.02
Daily average	149,771.54	151,350.39

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of June and July:

	June, '27	July, '27
Nat. Transit	1,150,482.45	1,137,052.50
S. W. Pa. P. L.	705,827.92	684,337.22
Eureka P. L.	1,760,893.31	1,859,908.44
Buckeye P. L. (Macksburg)	450,027.81	407,391.62
Buckeye P. L. (Cleve)	38,348.14	36,605.62
Buckeye P. L. (Lima, etc.)	4,303,614.65	4,280,952.96
Indiana P. L.	585,161.78	618,014.38
Cum'land P. L.	581,519.53	579,849.28
Southern P. L.	406,472.60	433,210.34
N. Y. Transit	513,088.14	419,558.02
Northern P. L.	509,881.48	487,732.61
Pure Oil	397,272.76	412,670.10
Emery P. L.	9,961.99	7,901.54
Paragon Ref.	24,515.54	18,557.87
Indian Ref.	45,531.36	58,707.96
Paragon Dev.	6,969.48	6,514.28
Pgh. P. L.	4,104.27	4,163.23
Total	11,493,673.21	11,453,127.97
Increase	134,291.93	*40,545.24

*Decrease.

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of June and July showing the gross stocks of the above fields:

	June, '27	July, '27
Penna.	4,097,743.11	4,190,178.95
Lima	939,796.06	1,006,906.85
Kentucky	1,190,128.89	1,129,805.76
Mid-Continent	5,233,298.85	5,079,649.41
Illinois	32,706.30	46,587.00
Total	11,493,673.21	11,453,127.97

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
Jan.	62,638	56,831	55,630	56,209
Feb.	68,023	60,606	60,394	61,298
March	68,721	60,575	61,644	63,247
April	71,058	63,062	63,019	60,337
May	63,942	59,217	60,580	60,284
June	63,230	61,270	64,131	62,757
July	64,208	62,639	63,206	58,574
Aug.	59,942	59,686	61,815	.....
Sept.	62,930	62,510	64,639	.....
Oct.	64,976	60,995	62,704	.....
Nov.	56,282	59,350	61,774	.....
Dec.	55,814	57,974	58,755	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima, and other fields for the past your years:

	1924	1925	1926	1927
Jan.	145,518	157,889	156,056	141,227
Feb.	148,732	160,863	159,488	138,534
March	147,098	154,591	150,239	133,777
April	147,611	151,429	152,371	140,227
May	134,997	146,995	160,998	144,894
June	143,010	149,467	160,257	149,772
July	124,187	161,338	160,945	151,350
Aug.	123,120	161,730	151,929	.....
Sept.	127,325	156,719	158,915	.....
Oct.	123,170	145,388	161,132	.....
Nov.	124,400	143,582	152,668	.....
Dec.	151,392	150,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
Jan.	11,353,276	9,859,170	9,718,003
Feb.	11,192,924	9,579,354	10,119,162
March	11,158,297	9,438,292	10,794,044
April	11,062,082	9,805,851	11,112,295
May	11,207,562	9,531,757	11,359,381
June	11,092,796	9,585,904	11,493,673
July	11,067,453	9,734,687	11,453,128
Aug.	10,974,481	9,668,947	.....
Sept.	10,781,753	9,433,732	.....
Oct.	11,086,850	9,269,866	.....
Nov.	11,068,158	9,257,667	.....
Dec.	10,458,445	9,454,512	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above.

1926—	Runs	Shipments	Stocks
July	3,025.86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
Sept.	2,788.18	3,373.06	13,985.68
Oct.	2,991.86	2,307.75	14,671.25
Nov.	2,810.60	1,664.55	15,817.31
Dec.	2,847.52	5,561.11	13,103.72
1927—			
Jan.	2,641.54	1,470.42	14,274.84
Feb.	2,764.30	1,082.82	15,956.32
March	2,587.20	1,878.56	16,664.96
April	2,834.23	1,512.65	17,986.54
May	2,788.47	539.29	20,215.72
June	2,946.29	664.40	22,497.61
July	3,153.29	1,276.61	24,374.39

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Aug. 1	1,996,959.35
Runs from wells	586,760.95
Other receipts	363,319.17
Regular deliveries	448,726.86
Other deliveries	556,098.36

The amount of Illinois oil run by the Tidewater Pipe Co. in July was 27,140.35 bbls. and deliveries were 36,175.67 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1926—	Runs	Deliveries
July	713,490.66	490,092.82
August	701,795.92	555,766.59
September	688,798.66	516,083.05
October	681,648.96	531,467.39
November	651,263.33	498,439.37
December	668,909.58	587,947.61
1927—		
January	621,421.03	530,085.98
February	595,831.16	476,950.71
March	737,593.91	554,947.43
April	593,225.97	444,818.49
May	728,759.40	543,192.02
June	640,975.85	532,217.78
July	613,901.30	484,902.53

Tidewater Pipe Co., Ltd., also delivered in July, 138,158.92.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS						
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
April	12,667	4,367	47,667	15,100	13,300	93,100	.....	.....	.....	.....	.....	93,100
May	10,452	7,645	18,387	9,226	6,226	51,935	.....	.....	.....	.....	.....	51,935
June	25,567	11,233	48,833	17,367	17,367	120,367	.....	.....	.....	.....	.....	120,367
July	13,484	17,290	33,065	9,129	5,452	78,419	.....	.....	.....	.....	968	79,387

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS						
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
April	22,700	9,033	62,033	6,067	26,567	126,400	5,067	18,033	.....	.....	23,100	149,500
May	21,032	9,807	93,452	7,774	23,580	155,645	1,807	30,612	1,936	.....	34,355	190,000
June	18,167	9,700	82,867	10,900	16,567	139,200	2,000	31,800	.....	.....	33,800	173,000
July	22,226	10,337	86,194	7,194	33,710	158,710	3,326	25,064	806	.....	29,096	187,806

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
July:	Month	18,743,199	14,657,482	13,983,759	3,582,367	5,019,893	2,173,812	3,336,664	3,420,000	64,917,076
	Daily average	604,619	472,822	451,089	115,575	161,932	70,123	107,634	110,323	2,094,099
August:	Month	18,765,080	14,618,236	17,093,586	3,681,436	4,878,191	2,190,739	3,457,697	3,339,500	68,024,465
	Daily average	605,326	471,556	551,406	118,756	157,361	73,896	111,538	107,726	2,194,338
September:	Month	18,104,354	14,466,510	17,580,100	3,450,060	4,603,230	2,079,840	3,141,323	3,330,000	66,755,817
	Daily average	603,498	482,217	586,003	115,002	153,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,058	15,720,689	19,001,338	3,714,637	4,625,138	2,166,559	3,071,720	3,398,000	70,664,189
	Daily average	611,808	507,119	612,946	119,827	149,198	69,889	99,088	109,613	2,279,490
November:	Month	19,173,128	16,876,950	18,593,160	3,593,490	4,299,480	2,064,911	2,842,587	3,216,000	70,649,706
	Daily average	639,104	562,565	619,772	119,783	143,316	68,497	94,752	107,200	2,354,990
December:	Month	20,276,950	17,883,903	19,753,591	3,654,156	4,266,189	2,018,734	2,658,301	3,313,000	73,823,829
	Daily average	654,095	576,868	637,212	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,184,872	19,035,426	18,605,362	3,769,879	4,076,469	1,905,570	2,620,303	3,332,500	73,530,382
	Daily average	651,125	614,046	600,173	121,609	131,499	61,470	84,203	107,500	2,371,948
February:	Month	17,983,711	19,752,348	16,483,713	3,352,076	3,574,256	1,784,104	2,385,135	3,007,200	68,321,542
	Daily average	642,240	705,441	588,704	119,717	127,652	63,718	85,183	107,400	2,440,052
March:	Month	19,835,724	22,480,921	18,232,617	3,675,143	3,852,920	2,032,982	2,476,798	3,335,800	75,923,905
	Daily average	639,862	725,191	588,149	118,553	124,320	65,580	79,574	105,100	2,449,158
April:	Month	19,493,825	23,208,130	17,801,140	3,516,930	3,378,240	1,994,330	2,615,770	3,474,000	74,482,365
	Daily average	649,870	740,371	593,371	117,231	112,608	66,431	87,193	115,800	2,482,745
May:	Month	19,506,054	23,263,443	19,539,082	3,704,314	3,493,669	1,935,175	2,742,583	3,467,000	77,646,340
	Daily average	629,228	750,378	630,393	119,494	112,699	62,426	88,471	111,839	2,504,722
June:	Month	19,181,443	22,830,330	18,399,810	3,437,580	3,365,760	1,859,820	2,643,437	3,330,000	75,018,179
	Daily average	639,381	761,011	613,327	114,586	112,192	61,994	88,114	111,000	2,500,606
	Total 12 months	230,813,897	235,754,894	216,067,900	42,151,966	48,454,454	24,217,577	33,941,133	39,965,939	859,757,861

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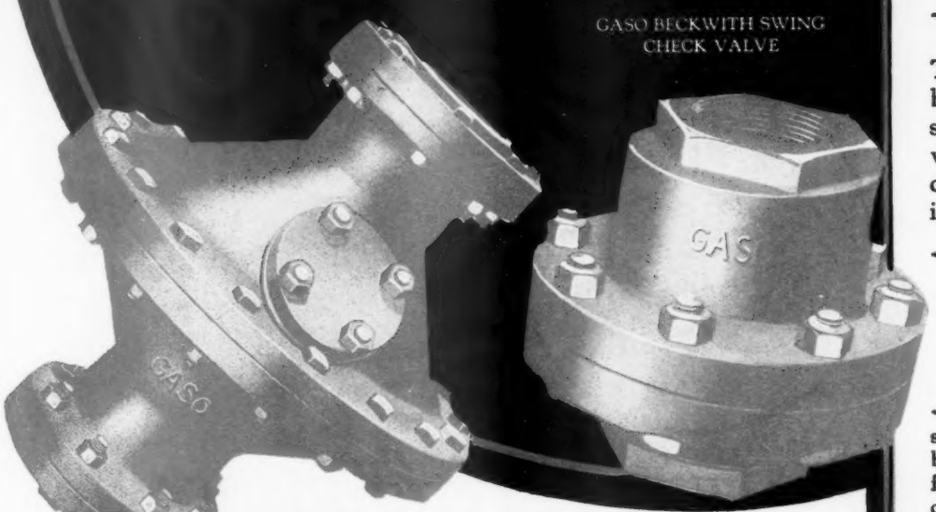

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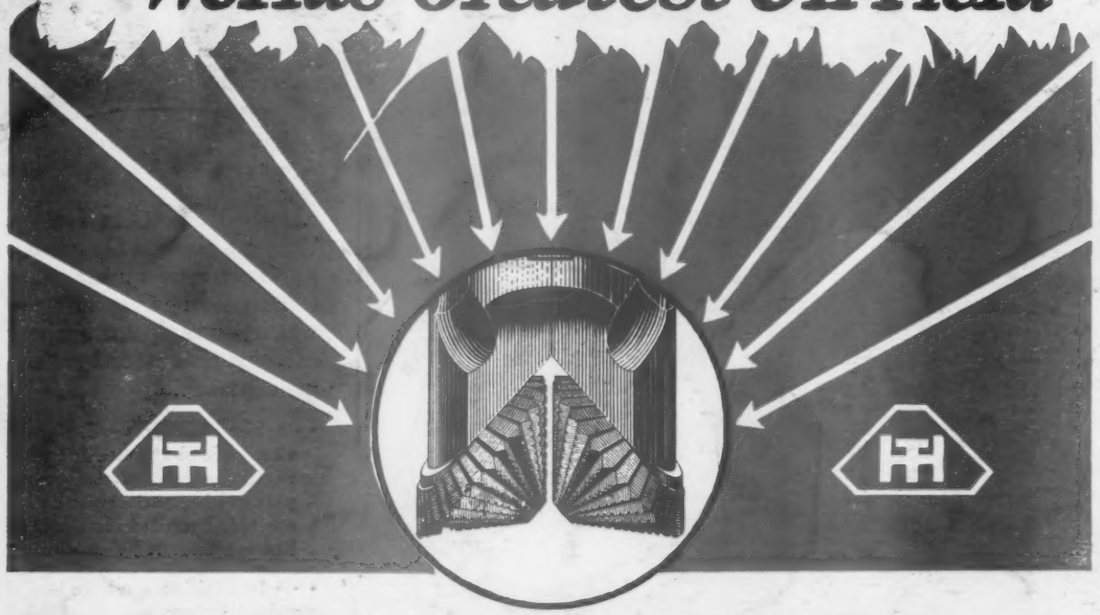

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